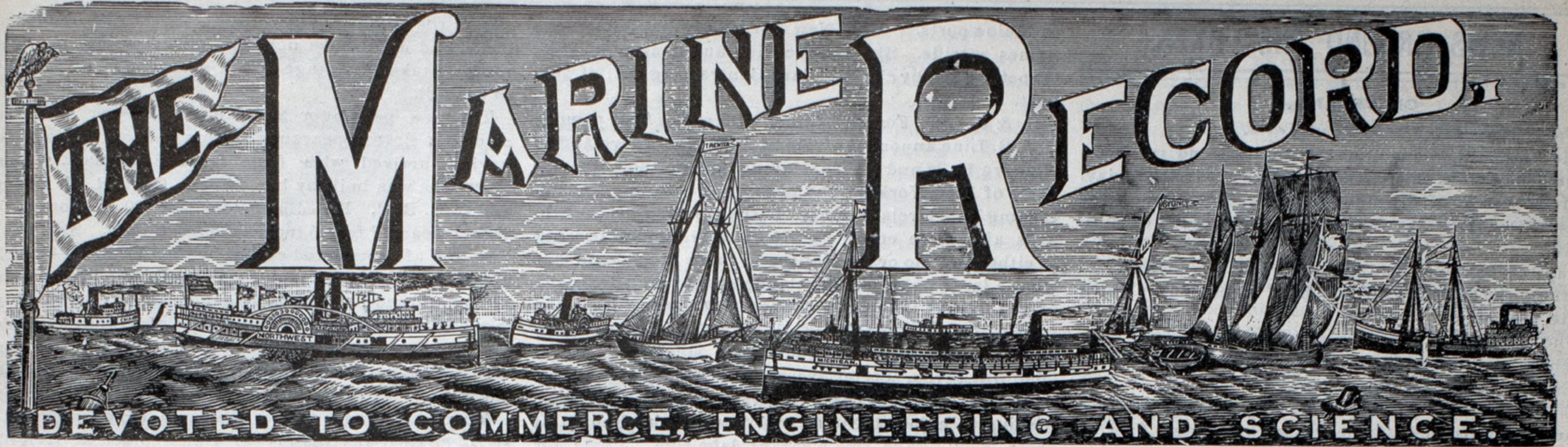




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CLEVELAND, OHIO, JUNE 28, 1894.

NO. 26

LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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LAKE CARRIERS' FINANCE COMMITTEE.

The regular meeting of the finance committee of the Lake Carriers' Association was held on Tuesday afternoon in the office of President James Corrigan. One of the most important matters taken up was the subject of the obstruction just above the Sault canal, which damaged the Pathfinder, John W. Moore and Onoko very badly last season, and which caused an expensive repair bill to the steamer Mariposa on her last trip down. Capt. George P. McKay, H. G. Dalton and Capt. John W. Moore were appointed a committee to communicate with Gen. O. M. Poe, Corps of Engineers, U. S. Army, to see if the rock cannot be removed, or at least marked

by a buoy. The committee was also instructed to bring to Gen. Poe's attention once more the practice of the contractors of blasting out rock with such force that the fragments stick up in the bottom of the channel, frequently causing damage to boats.

The question of raft towing came before the committee again, in the shape of a communication from Capt. Alex. McDougall, of Duluth, who submitted an amendment which it was proposed to offer to the river and harbor bill allowing larger rafts in St. Louis river and bay and in Duluth canal than the size at present prescribed in the bill in accordance with the recommendations of the board of United States engineers, especially appointed to look into this matter. The sentiment of the meeting was against offering any such amendment to the bill, and Mr. Harvey D. Goulder, the general counsel, was instructed to draft a protest against its adoption. Copies of the protest will be forwarded to Washington.

President Corrigan submitted a letter received by him from Capt. W. B. Morley, of Marine City, in which the latter suggested that the Lake Carriers' Association take such action as would give the passenger steamship North West the right of way over freight boats in getting through the Sault canal. The communication was laid upon the table, the committee feeling that the association had no right to act upon the proposal as an organization; but the sentiment of the meeting was that the individual vessel owners would willingly acquiesce in such a movement, especially as a number of the larger owners have already issued such instructions to their captains.

A NEW ATLANTIC CABLE.

The steamship Faraday is now laying a new telegraph cable across the Atlantic for the Commercial Cable Co.

She proceeded to a point 150 miles off the Irish coast, where the cable was spliced on to the shore end already laid. She will then proceed to Nova Scotia, where the final splice will be made. The cable, everything going favorably, is expected to be laid by the 30th of June.

This cable is larger and has a greater carrying capacity than any other ever laid. The tests during its manufacture have been most satisfactory and the cable has been completed without a single flaw. The length of cables taken on board was 1600 miles.

GULF OF MEXICO-HUDSON BAY.

The possibility of making a navigable waterway from the Gulf of Mexico to Hudson bay is again receiving attention. Senator Washburn, of Minnesota, has formulated a proposition, and a prominent Canadian politician is writing letters to the press on the subject, pointing out how cheaply the work could be accomplished. As far as the Canadian portion of the work is concerned there is free navigation from the international boundary to the north end of Lake Winnipeg, a distance of 380 miles "as the crow flies," with the exception of St. Andrews rapids on Red river, where a lock would be necessary for low stages of water. The greatest difficulties are encountered in the Nelson river which flows between Lake Winnipeg and Hudson's bay, a distance of between 250 and 300 miles. There are a number of falls and rapids on this stream, but as a general thing the water is deep enough for the largest of river steamers. Major Ruttan, Winnipeg's city engineer, has made an estimate of the probable cost of locks to overcome these falls and rapids, and he places it at the sum of \$7,000,000. His calculations, it is said, are based on government reports, though the figures seem entirely too low to be at all reliable.

THE NICARAGUA CANAL.

The bill which has been favorably reported by the Senate Committee on Foreign Relations providing for the construction of the Nicaraguan Canal, contains the following provision in section 16 for a board of engineers to report on the project:

That in order to make certain of the feasibility, permanence and cost of the said canal and its accessory works, a board of three engineers is hereby constituted, to be selected by the President of the United States, one from the Corps of Engineers, U. S. Army, one from the Engineers of the Navy and one from civil life, and it shall be the duty of the said board of engineers, under the direction of the Secretary of the Navy, to visit and carefully inspect the route of the said canal, to examine and consider the plans, profiles, sections, prisms and specifications for its various parts, to prepare and certify to full and detailed estimates of the work to be done, and of the cost of the same, together with a report to the President of the United States as to the feasibility, permanence, character and capacity of the said canal and of its various parts and accessory works. Should the board of engineers be of the opinion that a modification of the plans and location of the said canal adopted by the company would insure a greater efficiency economy of construction, or maintenance, then the board will so report in full. Should a majority of the members of the board report that, in their judgment, the Nicaragua canal can be constructed in general accordance with the plans of the Maritime Canal Co. of Nicaragua, with or without modifications, and conformably to the limitations and conditions contained in section 15, the President shall direct that all proper steps shall be immediately taken to carry into effect the provisions of this act.

The bill in substance is as follows:

"The capital stock of the Maritime Canal Co., of Nicaragua shall consist of 830,000 shares of the par value of \$100 each, which shall be non-assessable, and no more than this number shall ever be issued except by consent of Congress.

"If the Maritime Canal Co., shall, within nine months from the passage of this act show to the satisfaction of the Secretary of the Treasury that all liabilities of the company have been satisfied, the Secretary of the Treasury shall in behalf of the United States subscribe for 700,000 shares of the capital stock of said company.

"The new board of directors will consist of 11 members, one each named by Nicaragua and Costa Rica, one by the stock-holders of the Maritime Canal Co., and eight by the President of the United States. Not more than four of those named by the President shall be of the same political party. Their compensation shall be \$5,000 a year. The United States reserves the right to purchase all the stock at par at any time, except that issued by Nicaragua and Costa Rica. The bonds issued to meet the expenses of construction of the canal shall not exceed \$70,000,000, redeemable in 1924 or at any time after 1904 at the option of the United States. These bonds will be secured by first mortgage on the property of the company. In case default shall be made by the company at any time before the completion of the canal in the payment of interest or in any other respect, the right of foreclosure shall at once attach in favor of the United States without the necessity of judicial proceedings. Provision is made for the creation of a sinking fund for the liquidation of the principal and interest of the mortgage out of the earnings of the company.

"The construction of the canal is to be under the supervision of United States engineers. The act will be void if the company fails to comply with its requirements within nine months after its passage.

NEWS AROUND THE LAKES.

CLEVELAND, O.

Special Correspondence to The Marine Record.

Mr. Joseph R. Oldham, naval architect and surveyor, visited New York this week and is expected back to-day.

Mr. Frank E. Kirby and Mr. Alex. McVittie, of the Detroit Dry Dock Co., were in the city Tuesday on business.

Capt. Frank Welcome has resigned his position as chief of the North West and been succeeded by third mate, Moriarty.

The Globe Iron Works Co. supplied the new steamer recently launched from the yards of James Davidson with their steam steering engine.

F. W. Wheeler, the West Bay City shipbuilder, and John C. Fitzpatrick of the vessel brokerage firm of Galvin & Clark, Buffalo, visited this port on Monday.

Considerable competition is being evidenced among lake shipbuilders in securing the contract for the large new car ferries which the Pittsburg, Shenango & Lake Erie R. R. Co. intend to put afloat.

Manager Collier, of the V. O. T. Co., learned that the firemen of his line had become dissatisfied and would strike. He very adroitly headed off the turn affairs were taking, and on Tuesday made such amicable arrangements with his men as to keep the fleet at work.

The masters' salary list sent out from Detroit, and contained in another column of this issue is said to be all wrong by owners at this port. Capt. McIntyre of the Manitou, whose salary is quoted at \$3,000 for the season, is probably getting one third less.

Mr. F. P. Gordon, assistant general manager of the Northern Steamship Co., met with an accident on Sunday, which will keep him somewhat closely confined for a week or two. It appears that Mr. Gordon slipped on the deck of the North West, and badly sprained his ankle.

Capt. Dahlke is going it alone again and is no longer connected with the Cleveland Tug Co. The latter company gave Capt. Dahlke certain preferences, but he evidently concluded that more was to be gained by being exclusively on the outside in the tug business, and he will in future contract for whatever work he can catch.

Mr. Robert Logan, naval architect and surveyor, will adjust all claims made against the Northern Steamship Co. in the case of the fueling scow, which sunk in the river after getting a clip of the big boat's propeller wheel. The scow will be raised and repaired at once. In the meantime, another large fueling lighter is being transferred by Pickands, Mather & Co. from Buffalo to take the place of the damaged craft.

The report that F. W. Wheeler & Co. had a contract to build a larger steamer than the Centurion for a syndicate at the head of which was to be Mark Hopkins is learned to be unfounded. Mr. Wheeler says that there is no such a contract contemplated nor any grounds for the rumor having been circulated. The report, it appears, emanated from Detroit.

Harvey D. Goulder, Esq., is a candidate for a nomination for Common Pleas judge and there is no doubt he will get the nomination and be elected, although his army of marine friends will be sorry to lose him from the ranks even for the time that he will have to devote to the bench. There can be no more popular man, where known, than is Harvey D. Goulder.

Mr. George Callahan, marine editor of the *Plain Dealer*, has not wilted a bit owing to the dull outlook, for, regardless of low freight rates and a close money market, George chartered for life the handsome clipper built consort Grace Murphy, and took her under convoy on Tuesday. The best wishes of men in vessel circles will go with the new venture, as Mr. Callahan is known to be a fair, conscientious and painstaking man in his business. The happy couple left for Detroit in the evening.

Pickands, Mather & Co.'s fueling scow Essen collided with the steamer North West as she was towing to her dock on Monday morning and the coal barge, with its loading derrick and other machinery, is on the river bottom, while the North West was no worse for the slight bump. The big steamer was being towed in by a tug when the accident happened. The coal loading crew, numbering about ten men, was aboard, but before the scow sunk they were taken off by a tug. No one was hurt. Capt. Benham surveyed the barge for the owners and entered upon the work of raising her.

The New York *Recorder* says: "At an East River pier, discharging cargo, is the schooner Bibb, a most unpretentious craft, which attracts attention solely from the fact that her hailing port, Cleveland, is inscribed on her stern. People who see her are interested in the story of her journey hence from the inland seas. The Bibb is the old revenue cutter Pentagoet, which for a generation did duty on Lake Ontario. She is now engaged in the fishing service out

of Maine ports." The New York daily has mixed the names a trifle. She was the Bibb and is now the Pentagoet, owned by the Standard Contracting Co., of this port.

C. & B. Line Fourth of July program. The popular C. & B. Line announce a rate of \$2.50 from Cleveland to Niagara Falls and return, leaving here on their steamer State of New York on the evening of the 3rd, and returning to Cleveland early on the morning of the 5th. This allows the entire Fourth of July for sight-seeing at either Buffalo or the Falls, and there is no doubt but what a large party of Clevelanders will take advantage of the trip, as the rate is probably the lowest that the Line will make for their Falls trips this season. Also, on the morning of the Fourth, the steamer State of Ohio will give a special excursion to Beach Park at the very low rate of 50 cents for the round trip. Those wishing to escape the dust and heat of the Fourth at home, should take this pleasant lake ride. Music for dancing will be provided on the steamer and at the Park. The steamer returns home at 5 p. m.

CHICAGO, ILL.

Special Correspondence to The Marine Record.

L. W. Bates, of this port, secured a patent last week on a new dredger.

W. M. Egan chartered the steamer Thomas Cranage for wheat to Buffalo at 1½ cents.

Carr & Blair chartered the steamer D. C. Whitney and barge Wayne for corn to Buffalo at 1 cent.

Capt. John Prindiville chartered the steamer Inter-Ocean for clipped oats, South Chicago to Buffalo at 1c.

Palmer Cook & Calbick chartered the steamer Toltec for wheat to Buffalo at 1½ cents, the barge Miztec for corn to Buffalo at 1 cent.

The tug Geo. B. McClellan, which sank in the river near Kinzie street bridge was raised by the Chicago Towing Co., Tuesday.

At J. B. Bates & Co., shipbuilders, the steamer City of Duluth had her top sides calked, the schooner Libbie Nan received a new fore topmast.

Elphicke & Co. chartered steamer Josephine and schooner T. L. Parker for wheat to Kingston at 2¾ cents; steamers Rhoda Emily and J. J. Hill, corn to Kingston at 2½ cents.

At Miller Brothers' shipyard the tug Robbie Dunham was in dock for bottom calking, the tug Commodore for repairs to machinery, the schooner A. J. Dewey received a new rudder stock.

J. J. Rardon & Co., have recently sold for the Marinette Barge Co., the barge William Grandy to Capt. Thomas Currie, Port Huron, barge D. L. Filer to W. J. Carney, Chicago, barge E. S. Robinson to Capt. L. L. Slyfield, Port Huron.

John Gjeston & Co., sailmakers, supplied the schooner George L. Wren with a complete outfit of sails and gear. She left here Monday morning for South Haven. It is the intention of her owners to take an excursion party out on her on the 4th of July.

During the nine weeks of the coal miners strike, the O. S. Richardson Fueling Co., always had a supply of coal on hand at one or more of their docks, to supply their customers, as well as many Line steamers which usually coal up for their round trip at Buffalo.

At a largely attended meeting of the Vessel Owners and Masters' Association held at their rooms at 252 South Water street, Tuesday afternoon, June 26th, it was unanimously decided to hold out for the advance of freights demanded, all vessels and tow barges to be included. A number of vessels have received the advance in freights demanded.

With the completion of the twenty-foot channel this port will no doubt lose a large portion of its tonnage, and the transfer will be to South Chicago. So great are the railroad interests and general city traffic that a majority of the people would just as soon see the creek spanned by even more bridges than there are now, or next to that, the river filled in completely.

We are glad to learn that James B. Bates, the well-known shipbuilder is doing well under the treatment he is receiving at H. R. Allen's Surgical Institution at Indianapolis. He went there nine weeks ago and has been undergoing surgical operations to his left knee cap which he injured last winter by a fall on board the steamer Sachem.

Keith & Co. chartered the steamer S. C. Hall for oats at 1 cent, and barges Sam Flint and Nellie Mason for corn at 1½, all for Port Huron; steamer Sachem for oats to Port Huron at 1 cent; steamer John Duncan, corn to Buffalo at 1 cent; steamer Veronica and barge Amboy, wheat to Buffalo at 1½ cents; steamer Ralph, oats at 1 cent and barge Harold, wheat 1½ cents to Buffalo; steamer Marion, corn to Buffalo at 1 cent.

Work on the large steel steamer, I. W. Nicholas, now being built at the yards of the Cleveland Ship Building Co. is progressing much faster than is usual in constructive work. The water bottom is ready for testing, deck framing all in, spar deck partly laid and the hull

two-thirds plated. There is a large force of men at work, and as it looks now the Nicholas will be quite ready to take advantage of the usual raise of freights in the fall.

The new passenger and freight steamer Bon Ami, made her first appearance at this port on Friday last, having arrived with fruit from Saugatuck, Mich., where she was built by her owners, Capt. R. M. Rogers and C. E. Bird. Her dimensions are 120 feet over all, 22 feet beam, 8 feet 6 inches depth of hold. She has a fore and aft compound engine with cylinders 14 and 28 inches by 20 inches stroke, and a marine boiler 7 feet by 12 feet allowed 130 pounds steam, both built by the Montague Iron Works. The Bon Ami is of handsome model and a fast runner. Capt. Wm. Turnbull is in command, Hiram Adams first mate, Stephen Newham chief engineer.

Monday afternoon, the Seamen's Union ordered a strike against any vessels carrying lumber at freights less than those sanctioned by the V. O. T. & M. Association, who in the spring agreed with the Seamen's Union to pay \$1.50 per day if certain freights were maintained, and as all parties to the agreement are anxious to make a fair living they intend to pull together and try hard to do so.

WILLIAMS.

DULUTH, MINN.

Special Correspondence to The Marine Record.

Several mines are preparing to resume work, and will be shipping in a short time. Among these are the Hale, Ohio, Lone Jack and Biwabik on the Mesaba, the Pioneer on the Vermilion and two small properties in Michigan.

The new Duluth Board of Trade building, in which all the vessel interests at the head of the lakes will be housed, is being rushed along, the cornerstone being laid Tuesday with Masonic honors. It will be a magnificent seven-story, 100x150 foot, all fire proof building, and is to be done next spring.

The head of the lake has secured a new market for lumber—the West Indies—and a deal amounting to 8,000,000 feet has been closed. The lumber goes down the lakes and through the Erie canal, and the freight charge to Cuba is about \$9.50 per M feet. Lumber is going forward at a good rate and several large sales have just been made.

The Auburn & Norman, of the Minnesota Iron Co., send out their first cargoes this week. This biggest of all Lake Superior mining companies, will ship this year about as follows: Minnesota 450,000 tons, Chandler 550,000 tons, Canton 300,000 tons, Auburn 150,000 tons, Norman 100,000 tons. Total, 1,550,000 tons. Besides this the company will ship over its road 50,000 tons from Hale, 30,000 from St. Clair and other small amounts.

Iron ore shipments out of Lake Superior for this year to date have been not far from 1,750,000 net tons, navigation having been under way just sixty days, and the least active sixty of the 225 days of navigation of the usual lake season. Low freight rates have undoubtedly aided in sending forward this immense quantity of ore so early in the year, but the gradual though constant betterment in the iron outlook has not a little to do with it. Of shipments to date, Duluth and Two Harbors have shipped 750,000 net tons from the Mesaba and Vermilion ranges, Ashland from the Gogebic range 625,000 tons and Marquette the remainder. Escanaba, on Lake Michigan, is also shipping freely.

Wheat stocks decreased last week only 179,000 bushels, week's shipments having been only about 215,000 bushels. There are now in stock 6,300,000 bushels at all elevators. Mills are grinding rather slowly, but flour shipments are large, equaling about 1,200,000 bushels wheat last week. There has been a decided slump in freight rates the past week, wheat being taken in one or two cases at 1½c. Coal is beginning to come up, while ore rates are very weak at 65c, in part because of the Gogebic strike. The report from the Gogebic that this strike would extend to other ranges is not believed here. This strike will be a bitter thing for the mines. Gogebic counties last winter practically bankrupted themselves in their attempts to care for their unemployed, and will have neither the ability nor disposition—if want comes through strikes—to do very much the coming season. For the same reason the outside relief that was so free a year ago will be largely wanting.

Capt. McDougall has this to say of the immediate outlook: "On the whole, things look well for profitable lake freights during the latter half of the season. In the past three or four years the docks were practically blocked with coal in July. This year they will be cleaned up, and the stock piles in the country, at railroad yards and all industrial plants which carry stocks of coal, are entirely wiped up, so that it will take a lot of coal to supply the outside coal stations at all the railroads and manufacturing establishments in the north-west. The crops throughout the north-west

never looked better, and it takes coal to haul wheat in this cold country. I feel confident that from one and a half to two million tons of coal will be wanted at all Lake Superior ports, and if this has to come between the first of August and the first of December, coal freights should average better than 50 cents. We have not a ton of coal contracted to carry with our fleet, and I would rather not carry any on contract."

BUFFALO, N. Y.

Special Correspondence to The Marine Record.

The Geo. H. Parrish & Co., shipchandlery, will now be carried on under the firm name of Geo. H. Parish, Mr. John L. Crosthwaite having retired from the business.

Capt. Rice and Capt. George McLeod have been appointed to hold a survey on the schooner D. K. Clint damaged while passing the Lime Kiln Crossing on her way down. She will dry dock here for survey and repairs.

Capt. John C. Floor, late first mate of the steamer Spokane, fell into the hold of the steamer at Duluth Monday and died from his injuries. Capt. Floor was master of the schooner Golden Age, but as his vessel was laid up he took a position on the Spokane. He was an active member of the Buffalo Shipmasters' Association and leaves a family. He resided at this port, and was highly respected.

Notwithstanding the recent remarks about the navigation of the new cut, it is found that the steamer North West does not pass through the Hay Lake channel, St. Mary's river, since her first trip, her officers claiming that it is too narrow for two vessels to meet and pass in safety. However this may be, she is now taking the old route in preference to the shorter one. Eventually the rule will no doubt come into force that both routes will be used for vessels going one way only making a sort of double track system.

The new life boat to be added to the Buffalo life saving equipment arrived here this week, having been towed from Detroit by the revenue cutter Fessenden. Superintendent of Construction Davis has been effecting many repairs in the local boathouse and preparing it for the reception of the new boat. It has been moved back one foot, so that a more gradual incline could be secured. Everything is completed now and the station is in readiness. The new boat is of the English pattern, and was constructed by the Detroit Boat Works. Superintendent E. E. Chapman says that it will be tested as soon as the carriage for the boat arrives, which will be in the course of a few days. It may be found necessary to increase the present crew of seven by the addition of another sailor.

Erie canal boat captains joined hands on Tuesday to secure higher freights. An association was formed for that purpose and the wheat rate to New York was at once raised from 2½ to 3 cents, other grain in proportion. It was claimed that the competition between the various canal forwarders had reduced the rates below the cost of running expenses and repairs. The claim was made that if a combination had been in effect the rate would be 3½ cents. The following resolution was adopted: "Resolved that we, boat owners and principal sufferers in consequence of the said rate cutting, most earnestly recommend that all forwarders be taken into the Buffalo Forwarding Co. and that Frank Beadle, jr.; W. L. O'Rourke, jr.; John Baker, M. Dupuy and M. R. Swan be delegated a committee to examine all forwarders' books and apportion 1,000 shares in proportion to the loads of grain shipped by each forwarder during the season of 1894."

DETROIT, MICH.

Special Correspondence to The Marine Record.

The steamer Ionia had her high pressure cylinder bored out and lined and a new piston put in at the Riverside Iron Works this week. She chartered here, wheat to Buffalo.

The Westcott Wrecking Co.'s tug Wales has been chartered by the Saginaw Bay Towing Association to tow rafts for the next 60 days. She brought down a 4,000,000 raft this week and returned up the French river for another just as large.

The D. & C. Steam Navigation Co. landed from Cleveland this week a large consignment of steel plates for the new municipal electric lighting plant's smokestack. The stack will be 150 feet high, 17 feet in diameter at the base, tapering to nine feet, and will be made of ¼ and 5-16 inch Otis steel.

The steamer Unique will simply slide past everything on the Detroit river if she fulfills the expectations of her owners and builders. Her route is to cover about 224 miles per day and make all landings between Port Huron and Detroit both ways, and an intermediate trip to St. Clair. She is very strongly built, has fine lines and is well engined, being designed specially for the river passenger traffic.

The Detroit Boat Works have just turned out four new lifeboats, and after undergoing a thorough test for righting, self-baling, etc., they were accepted by the U. S. L. S. S. and will be taken to their destination. The Wolverine Dry Dock Co. has contracted to build nine more lifeboats for the department, and an officer is detailed to superintend their construction. With the complete addition, lake ports ought to be considered well equipped for all emergencies in the future.

The boarding boat, with the quarantine officers, has been ordered out of commission, and the inspection of steamers on that plan is discontinued. Dr. Farnum telegraphed to Washington a few days ago that the work could not be done with only one boat and two inspectors any longer, the passing steamers and tows of barges being so numerous that they could not all be inspected. Past Assistant Surgeon Stimpson, of the Marine Hospital, was detailed to look into the matter, and made a tour of the river to see the work performed. In three hours the doctors vaccinated 130 persons on board different vessels. Dr. Stimpson reported to Inspector General Dr. Walter Wyman, at Washington, that two inspectors could not do the work, and Saturday afternoon orders from the Treasury Department came to take the Florence B. out of commission and cease boarding passing vessels.

STAGE OF WATER AT ST. MARY'S FALLS CANAL.

DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
Depth of water at the St. Mary's Falls Canal for the week ending June 28, 1894:

June 21 8 a. m.,	14 feet 11 inches.	8 p. m.,	14 feet 10 inches.
" 22 "	14 " 10 "	" 14 "	10 "
" 23 "	14 " 10 "	" 13 "	0 "
" 24 "	14 " 11 "	" 15 "	1 "
" 25 "	14 " 11 "	" 15 "	0 "
" 26 "	14 " 11 "	" 15 "	0 "
" 27 "	14 " 10 "	" 15 "	1 "
" 28 "	14 " 9 "	" "	" "

THE NEW ATALANTIS.

(From Harper's Weekly.)

Atalantis is the name that will hereafter dignify and distinguish a location in the Atlantic ocean about sixteen miles east of the Highlands of Navesink, and thirteen miles south of the Long Island shore. The old and somewhat ill-flavored title of "Cholera Banks" will surrender to that of the classical Atalantis of Grecian mythology. Here a palatial structure is at once to be erected on huge iron stilts.

The foundations of this building will consist of thirty-six iron cylinders fifteen feet in diameter and one hundred feet in length. These piles will extend thirty feet below the bed of the ocean, and will be secured to each other, according to the claim of the engineers, by girders, cross-bracings and in other ways so as to defy the mightiest storm wave that ever rolled in the Atlantic. After the great tubes have been placed in position they will be filled with concrete, and the foundation, as a whole, will represent three dozen iron-incased pyramids of rock, rising from a depth below the ocean-bed, and towering thirty feet above the level of the sea.

In the construction of the building wood and other inflammable material will not be used, but the entire superstructure will consist of bronze, steel, iron, glass and tiling, thus making it fire-proof in the fullest acceptance of the term. The style of architecture will be imposing. There will be an amphitheater calculated to accommodate fifteen thousand people, and a roof-garden that will hold three thousand. From the latter place will be witnessed a marine panorama of majestic transatlantic liners passing near by, and every other character of water-borne craft entering and leaving the greatest harbor of the Western world. Several private piazzas for permanent hotel guests and four extensive promenades are other features of the plans, which also call for a fishing pavilion, telegraph and telephone offices, Turkish, Russian and sea baths, a photograph gallery and various bazars.

In order to protect themselves against the charge of erecting a menace to navigation, the promoters of the enterprise have given notice to the government that they will bind themselves to place a powerful reflecting light in the main tower of the building, and maintain it the year round.

The officers who will be responsible for the construction of this ocean hotel are Capt. R. D. Evans, U. S. Navy, in charge; James C. McGuire, engineer; Capt. Howard Patterson, superintending engineer.

The consideration of creating a building out in the sea opens up a peculiar line of thought. As the structure will be situated more than a marine league from the nearest shore, the United States can exercise no jurisdiction over it, either in the sense of interference or protection. Atalantis may become an independent power, with every right, according to international law, to form its own government and to prescribe its own laws. Thursday, June 14th, the flag of the New Atalantis was raised on a buoy anchored on the site selected, and a new autonomy was established on a sub-marine sand bank.

ASSOCIATION OF STEAMSHIP LINES.

The association of the lake lines was completed by the general managers at Buffalo a few days ago, but the allotment of percentages of traffic to be allowed the various steamer lines from Chicago and Lake Superior is being made by the trunk lines in New York. Great difficulty has been experienced in securing an equitable division of lake traffic between the various lake lines which would be satisfactory, and the problem has been talked back and forth between the lake line managers and the trunk line presidents several times this season. In making the final allotment the traffic for the past five years has been the basis for the division of business. Thus far the commissioner of east-bound traffic has had no trouble in maintaining through rates to the seaboard and to foreign ports, and it is hoped that the lake business of the trunk lines has at last been placed on a firm basis, which will end the constant warfare between the lines.

ITEMS FROM THE LOG BOOK.

Mr. E. Heyde, E. Saginaw, Mich., was granted his patent on a steam steering apparatus, a few days ago.

One of the English type of lifeboats, built by the Detroit Boat Works, has been delivered at Erie, Pa., by the revenue cutter Fessenden. The crew will be increased to man it.

Ann Arbor No. 2, one of the big transfer boats of the Toledo, Ann Arbor & Northern Railroad, has discharged at Menominee material for a railroad ferry at that point. The tracks and landing will be ready for business by July 4.

A new lake route, connecting Manitowoc with the east, has just been started. The steamer Marquette will make three trips per week from Manitowoc to Frankfort and Manistee, where close connections will be made with Michigan railroads. The new route gives Manitowoc the same freight rate as Milwaukee on east-bound business.

The plan for having one adjuster at Buffalo to look after the interest of underwriters on grain cargoes, which was brought forward at the winter meetings of Inland Lloyds, has so far been carried out that Capt. J. G. Orr has been appointed representative for nine out of the twelve general agencies on the lakes. This insures his having the major interest of every grain cargo in his charge. It will be his duty to make all adjustments and to look after all damaged grain.

In the case of the schooner Minnie Davis vs. The Hunter Savidge, a case in admiralty, which was decided in Judge Swan's court at Detroit a month or so ago in favor of the Minnie Davis, with a verdict of \$2,500 damages, the owner of the Hunter Savidge will try and have the judgment reduced. He claims as one of his points that the owners of the Minnie Davis offered to sell her for a good deal less than \$2,500 at one time. The suit grew out of a collision which took place on Lake Erie.

The old steamer New York, once the pride of Lake Ontario was recently burned. The New York was built at Clayton in 1852, and during the war was used as a dispatch boat on the James River. She was also employed in carrying prisoners of war when exchanges took place, between the North and South. After the war the New York went to St. Johns, N. B., and was used on the route between that port and the coast of Maine. She was a fast boat, and was very popular with the traveling public up till a few years ago, since when she was paid off the route. The New York cost with furnishings and equipment \$150,000.

Chief Engineer B. M. Hill, of the steamer Selwyn Eddy, writing *The Detroit Free Press* from Sault Ste. Marie, recently, vouches for the following: "On our last trip down Lake Superior, when off Keweenaw Point, with quite a chunk of sea on, we scooped up a 35-pound trout on deck that furnished a meal for the entire crew." That's a pretty good one, Mr. Hill, but you ought to hear some of the yarns of those who sailed years ago on the old Benton and the St. Joe. Boats rolled so in a heavy sea, fish used to jump in the smokestacks and come out fried at the firebox. This is an age of improvement, though, and besides, everybody doesn't like their fish fried." So says the marine man on the *Detroit Free Press*.

The underwriters, who have paid the risks on the steamer Dean Richmond, lost with all hands on Lake Erie during the memorable gale of October 14 last, will endeavor to locate the wreck with a view of recovering such portions of her cargo and machinery as can be secured. There is a variety of opinions as to where the Richmond foundered. It has always been maintained by people living on the shore not far west of Dunkirk that they heard her whistle blowing during that dreadful night. If such belief is well founded the wreck undoubtedly lies within a mile of the beach, and no prolonged search should be necessary. The fact that the dead bodies of her crew and the loose wreckage all came ashore close together is considered by expert wreckers evidence that she went down at no great distance from shore. Murphy Brothers, the well-known Detroit wreckers, have been given the contract and they have an excellent outfit on the ground.

MARITIME LAW.

CARRIERS' ACT, FEBRUARY 13, 1893.—AN ACT RELATING TO NAVIGATION OF VESSELS, BILLS OF LADING AND TO CERTAIN OBLIGATIONS, DUTIES AND RIGHTS IN CONNECTION WITH THE CARRIAGE OF PROPERTY.—Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall not be lawful for the manager, agent, master or owner of any vessel transporting merchandise or property from or between ports of the United States and foreign ports to insert in any bill of lading or shipping document any clause, covenant or agreement whereby it, he or they shall be relieved from liability for loss or damage arising from negligence, fault or failure in proper loading, stowage, custody, care or proper delivery of any and all lawful merchandise or property committed to its or their charge. Any and all words or clauses of such import inserted in bills of lading or shipping receipts shall be null and void and of no effect.

SEC. 2. That it shall not be lawful for any vessel transporting merchandise or property from or between ports of the United States of America and foreign ports, her owner, master, agent or manager, to insert in any bill of lading or shipping document any covenant or agreement whereby the obligations of the owner or owners of said vessel to exercise due diligence, to properly equip, man, provision and outfit said vessel, and to make said vessel seaworthy and capable of performing her intended voyage, or whereby the obligations of the master, officers, agents or servants to carefully handle and stow her cargo and to care for and properly deliver same, shall in any wise be lessened, weakened or avoided.

SEC. 3. That if the owner of any vessel transporting merchandise or property to or from any port in the United States of America shall exercise due diligence to make the said vessel in all respects seaworthy and properly manned, equipped and supplied, neither the vessel, her owner or owners, agent, or charterers shall become or be held responsible for damage or loss resulting from faults or errors in navigation or in the management of said vessel, nor shall the vessel, her owner or owners, charterers, agent or master be held liable for losses arising from dangers of the sea or other navigable waters, acts of God, or public enemies, or the inherent defect, quality, or vice of the thing carried, or from insufficiency of package, or seizure under legal process, or for loss resulting from any act or omission of the shipper or owner of the goods, his agent or representative, or from saving or attempting to save life or property at sea, or from any deviation in rendering such service.

SEC. 4. That it shall be the duty of the owner or owners, master or agent of any vessel transporting merchandise or property from or between ports of the United States and foreign ports to issue to shippers of any lawful merchandise a bill of lading, or shipping document, stating, among other things, the marks necessary for identification, number of packages, or quantity, stating whether it be carriers' or shippers' weight, and apparent order and condition of such merchandise or property delivered to and received by the owner, master or agent of the vessel for transportation and such document shall be *prima facie* evidence of the receipt of the merchandise therein described.

SEC. 5. That for a violation of any of the provisions of this act the agent, owner or master of the vessel guilty of such violation, and who refuses to issue on demand the bill of lading herein provided for, shall be liable to a fine not exceeding two thousand dollars. The amount of the fine and costs for such violation shall be a lien upon the vessel whose agent, owner or master is guilty of such violation, and such vessel may be libeled therefor in any District Court of the United States within whose jurisdiction the vessel may be found. One-half of such penalty shall go to the party injured by such violation and the remainder to the government of the United States.

SEC. 6. This act shall not be held to modify or repeal sections 4281, 4282 and 4283 of the Revised Statutes of the United States, or any other statute defining the liability of vessels, their owners or representatives.

SEC. 7. Sections one and four of this act shall not apply to the transportation of live animals.

SEC. 8. That this act shall take effect from and after the first day of July, eighteen hundred and ninety-three.

Approved, February 13, 1893.

MASTERS' SALARIES.

The highest paid vessel masters on the lakes, according to the *Detroit Journal*, is Capt. Allan McIntyre, who sails the big passenger steamer Manitou for Leopold & Austrian, on the Chicago-Sault Ste. Marie route. He is credited with receiving \$3,000 a year. Capt. Campan, sails the North West, a much larger and finer boat than the Manitou, is said to receive a little more than half of McIntyre's salary. Last year according to a well posted Milwaukee vessel man, the masters of the six steel

freight boats in the Northern line, which owns the North West, were paid \$1,600, though it is probable that figure has been heavily cut this season. From the same source it is learned that last season's figures in other lines were as follows: Menominee Transit Company, six steel steamers, \$1,800; Minnesota Steamship Company, eight steel steamers, \$1,800; Mutual Transportation Company, three steel steamers, \$1,800 to \$2,000; the five steel boats in the Lehigh Valley Transportation Company, \$1,500, and the six wooden boats, \$1,300. In the Western and Anchor lines the masters are said to be paid by the month, no two getting the same figure, while in the Union line the figures run all the way from \$1,200 to \$1,800. All of these figures are contradicted and questioned by the Cleveland owners.

NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—MICHIGAN.

PORT AUSTIN REEF LIGHT STATION. Notice is hereby given that, on or about June 30, 1894, the steam siren now used during thick or foggy weather at Port Austin Reef Light Station, in Lake Huron, about 1½ miles from the mainland, off the entrance to Saginaw Bay, Michigan, will be discontinued, and thereafter the fog signal will be a 10-inch steam whistle, sounding blasts of 7 seconds' duration separated by silent intervals of 80 seconds, thus:

Blast	Silent interval	Blast	Silent interval
7 sec.	80 sec.	7 sec.	80 sec.

By order of the Light House Board.

JAMES A. GREER,

Rear Admiral U. S. Navy, Chairman.

Office of the Light-House Board, Washington, D. C., June 19, 1894.

AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation: A second bearing of the Sun may be taken at sunset by reversing the bearings to read west instead of east, as, for example, N. E. by E. for a sunrise bearing would read N. W. by W. for a sunset, or E. 30° N. to W. 30° N.

LAKE ERIE AND S. END LAKE MICHIGAN. LAT. 42° N.		
Sunrise.	Bearing (degrees)	Bearing (points).
June 30	E. 32° N.	NE. by E. ½ E.
July 2	E. 32° N.	NE. by E. ½ E.

LAKE ONT., S. END HURON AND CENTER LAKE MICHIGAN. LAT. 44° N.		
Sunrise.	Bearing (degrees)	Bearing (points).
June 30	E. 33° N.	NE. by E. ½ E.
July 2	E. 33° N.	NE. by E. ½ E.

N. END LAKES HURON AND MICH. LAT. 46° N.		
Sunrise.	Bearing (degrees)	Bearing (points).
June 30	E. 34° N.	NE. by E.
July 2	E. 34° N.	NE. by E.

LAKE SUPERIOR. LAT. 48° N.		
Sunrise.	Bearing (degrees)	Bearing (points).
June 30	E. 36° N.	NE. ¾ E.
July 2	E. 36° N.	NE. ¾ E.

LAKE SUPERIOR. LAT. 48° N.		
Sunrise.	Bearing (degrees)	Bearing (points).
June 30	E. 36° N.	NE. ¾ E.
July 2	E. 36° N.	NE. ¾ E.

With a compass correct magnetic, the difference between the observed and true bearing will be the variation for the locality. If there is any deviation on the course the vessel is heading at the time of taking the bearing the result after the variation is applied will be the amount of deviation on that course.

PETROLEUM FOR FUEL.

Great interest has been taken all over the lakes in the experiments of Chicago's smoke inspector with petroleum as a smokeless fuel for tugs. After several weeks' preparation, the smoke inspector gave a formal test, the Mayor and other city officials being on board. The inspector was enthusiastic over the success of the test, but the tug owners took an entirely opposite view. A run of some ten miles was made in the lake. At the start the engine was run with full throttle, but with a very short cut-off, as developing about two-thirds of her power. After running three miles, the steam had gone down to sixty-five pounds, and a half throttle was used thereafter. The highest number of turns her propeller wheel made was 110, whereas with full power 160 revolutions are required. This shortage of steam was considered a vital defect. Constant care was required to feed the oil properly, and the instant the exhaust ceased going into the stack the feed had to be shut off to prevent the fire bursting out of the firebox. Some men believe that the oil was stored in dangerous proximity to the boiler. Several changes will be made, and another test given. The opinion on the experiments, so far, is that the problems connected with burning petroleum on tugboats are as yet unsolved. So far as can be learned, the cost of petroleum, as compared with that of soft coal, will be much larger on tugs where the same power is developed.

MICHIGAN LUMBER INDUSTRY.

The Benton Harbor Lumber Co., received 2,800,000 feet of lumber this week from the Lake Superior regions. The consignment was brought in by one fleet of six vessels. The lumber company has further contracted to receive 20,000,000 feet of lumber at Benton Harbor this summer.

The Panther Lumber Co., has just been organized at Saginaw Mich., with a paid up capital of \$300,000. Its stock-holders are Isaac Bearinger, W. L. Thompson, and J. P. Kroll, of Saginaw; H. W. Sibley, of Rochester, N. Y., each of whom take \$50,000 stock, and John E. Mills, of Mayville, Mich., who takes stock to the amount of \$100,000. The company will conduct its operations in McDowell county, West Virginia, on the Clinch river, where a large sawmill, planing mill, box factory and store will shortly be erected by John Patten, the well-known millwright of East Tawas. The mill will have a capacity to cut 20,000,000 feet a year and employ 100 men. The company owns 200,000,000 feet of splendid standing timber consisting mostly of oak, chestnut, walnut and yellow poplar.

TRANSFERS OF VESSEL MASTERS.

Capt. James Martin of the steamer Roanoke has been appointed marine superintendent of the F. & P. M. steamers, with head office at Milwaukee, Capt. Lon Cox, master of the Roanoke; Capt. William Anderson, master of the steamer Thompson. Capt. Robert McLeod of the steamer Osceola will take command of the Colorado and Capt. William Lead will sail the Osceola.

NOTES.

CANADIAN officers of the Mercantile Marine as in England and her colonies are charged for the first issue of their license or certificate, from \$15 to \$4 according to the grade of the licence and the trade they desire to enter.

THE first news from the Arctic regions since Civil Engineer R. E. Peary, U. S. N., invaded it was brought to Philadelphia June 15, by Capt. Peterson, of the bark Silicom, the first of the fleet of far North trader to arrive since last year. Capt. Peterson says the past winter in Greenland has been an unusually severe one. The belief is that any attempt to reach the pole this year would be foolhardy and result in the loss of the lives of all attempting it.

AN exhibition of plans for a maritime canal between the Bay of Biscay and the Mediterranean has been opened at Paris by a society of promoters. The plans have been made in response to an invitation framed by a committee of experts. The proposed length of the canal varies from 220 to 320 miles, and the cost from 1,000 to 1,500 millions. Some competitors, however, propose that vessels should be transported by railway, or by rolling docks propelled by electricity. The promoters invite the government to appoint a commission to report on the plans, but it does not seem likely that the scheme, though it has been much talked of in late years, has any immediate chance of realization.

A PLEASING sign of the times is the attention that yacht designer Watson, the eminent Scotch author of the lines of so many cup competitors and other famous racers, has been of late paying to American marine inventions and devices. Not a few Americanized improvements were noticeable on the Valkyrie, and now we record the fact that Mr. Watson has adopted the Providence capstan on some new yachts he is building on the Clyde. The efficiency of such American manufactures as those of the American Ship Windlass Co., Providence, R. I., is such as to command for them the lead wherever known.

THE famous Ferris Wheel is finally being taken apart for shipment to New York. According to the *Chicago Tribune*, "It will take ten weeks to take the wheel to pieces. The car that was used for carrying the Krupp gun will be used for carrying the seventy-ton axle. The material will be taken in five trains of thirty cars each to New York city. There are 3,000 tons of metal in the wheel, and 500,000 feet of timber is needed for the false work. Taking the wheel down will be more dangerous than putting it up. Only one life was lost in erecting the big attraction. The expense of taking down, moving, and rebuilding the wheel will be \$150,000. In New York it is to be placed at 37th street and Broadway. Old Vienna will be reproduced around it. Here the wheel had 3,000 electric lights; in New York the number will be doubled. The old Ferris Wheel Co. goes out of existence, and a new company, composed of New York men, has been formed. Superintendent L. V. Rice has charge of the removal. During the fair the wheel went around 10,000 times, and carried 2,000,000 passengers. The largest single load was carried October 19, when, at 12:30 o'clock, 1,768 people were in the cars. The largest day's business was October 10, when 38,000 people were carried. October 9, 10 and 11 there were 114,000 passengers, the largest average for any three days.

A SUCCESSFUL MECHANICIAN.

Joseph S. Mundy, mechanical engineer and manufacturer of hoisting engines, Newark, N. J., was born in Rahway, in April, 1847. His father, Henry E., was born in 1816 and died in 1878, and married Frances Crowell, by whom he had eight children, seven boys and one girl. His great grandfather was a soldier in the Federal army during the revolutionary war, and was engaged in the famous charge from the Cedar Grove swamp, between Perth Amboy and Rahway against the Tories, driving them back with heavy loss, and capturing many prisoners.

His grandfather, Henry, was a carriage manufacturer, and was one of the first promoters of the New Jersey Railroad and Transportation Company, now part of the Grand Trunk Line of the Pennsylvania Railroad. Joseph S. received his education in a district country school during the winter months, working on his father's farm during the balance of the year, until 1866, when his father removed to Newark, N. J., where Joseph S. went to work to learn the stone cutter's trade. His mind leaned towards mechanism, and not being contented with the trade he started to learn, he shortly after apprenticed himself in August, 1866, with Dutton & Wilson, machinists, at \$3 per week, where showing so much interest for his employers that before the year had elapsed he was advanced to \$7.50 per week. In the spring of 1868 this firm dissolved, and he engaged with the Hick's Engine Company as journeyman. In the winter of 1868 he left the Hick's Engine Company and engaged with Messrs. Horton & Kent, successors to Messrs. Dutton & Wilson, his former employers. Shortly after this Horton bought out Kent's interest in the business, when Joseph S. went into partnership with Horton on borrowed capital, the firm being Horton & Mundy, and in the spring of 1870 he bought out the entire business, his father furnishing the money. During this time he studied hard, also doing the work of three men, working from 7 in the morning until 10 at night, in order to make a success of his business. In 1871 he began to make sketches and plans of a friction drum hoisting engine. Not having any money to complete his invention with, until 1873, when he made his first complete machine, altering and changing the entire mechanism three times, after which it proved to be the most complete and best known device for pile driving and hoisting ever produced, and was therefore patented by him in 1875, since which time he has been compelled to spend large sums of money in the United States District courts to protect himself against infringers of his patents, having had several suits, and every one decided in his favor, these suits being brought before the United States District Court Judges Wheeler, Nixon, Wallace and Lacombe. Thousands of his engines have been supplied to bridge builders, railroad contractors, railroad companies, dock builders, quarries and mining companies. From a small beginning, doing the work of three men, with an eye singly to his business, devoting his spare time to study and mastering the complex questions of gearing, power, etc., he has by his years of unceasing toil developed and brought before the country the acknowledged best hoisting engine known. His works now cover nearly two acres of ground, with all the latest improved class of machinery with an area of 150,240 square feet of working room.

His motto has always been that anything that is worth doing at all is worth doing well. He is a man among men, and is universally liked by all who know him. He has been building hoisting engines for the past twenty-eight years, and during these many years of toil has made about all of the important improvements that have ever been made in the hoisting engine, having always made this his especial business. His market is the world, and his engines are known everywhere as strictly first-class.

CHICAGO HARBOR REGULATIONS.

The Chicago Collector of Customs has received from the Treasury Department the rules and regulations governing the anchorage and movements of vessels in the Chicago outer harbor during the season of 1894. The rules are practically the same as were enforced last year, modified by the removal of the Van Buren street pier, where the boats engaged in the World's Fair traffic landed. The rules, which go into effect Aug. 1, are as follows:

Any vessel may anchor west of a line drawn south from Ogden's slip, south of a line running east and west at a distance of 300 feet south from the south line of the Randolph street viaduct, and not to the southward of a line running parallel to Van Buren street projected, 700 feet north from the same. Anchorage grounds are in the basin opposite Lake Front, south of

Van Buren street projected 1,000 feet, west of a line drawn from Van Buren street so projected, to the east end of the Illinois Central pier at the south entrance, not within 700 feet of said Van Buren street projected, nor within 300 feet of Illinois Central Railroad breakwater, or the Illinois Central pier.

The Collector said these rules give a larger space for the anchorage of vessels in the basin, and at the same time they make it impossible for vessels of any kind to tie up at the government pier or within 300 feet of it.

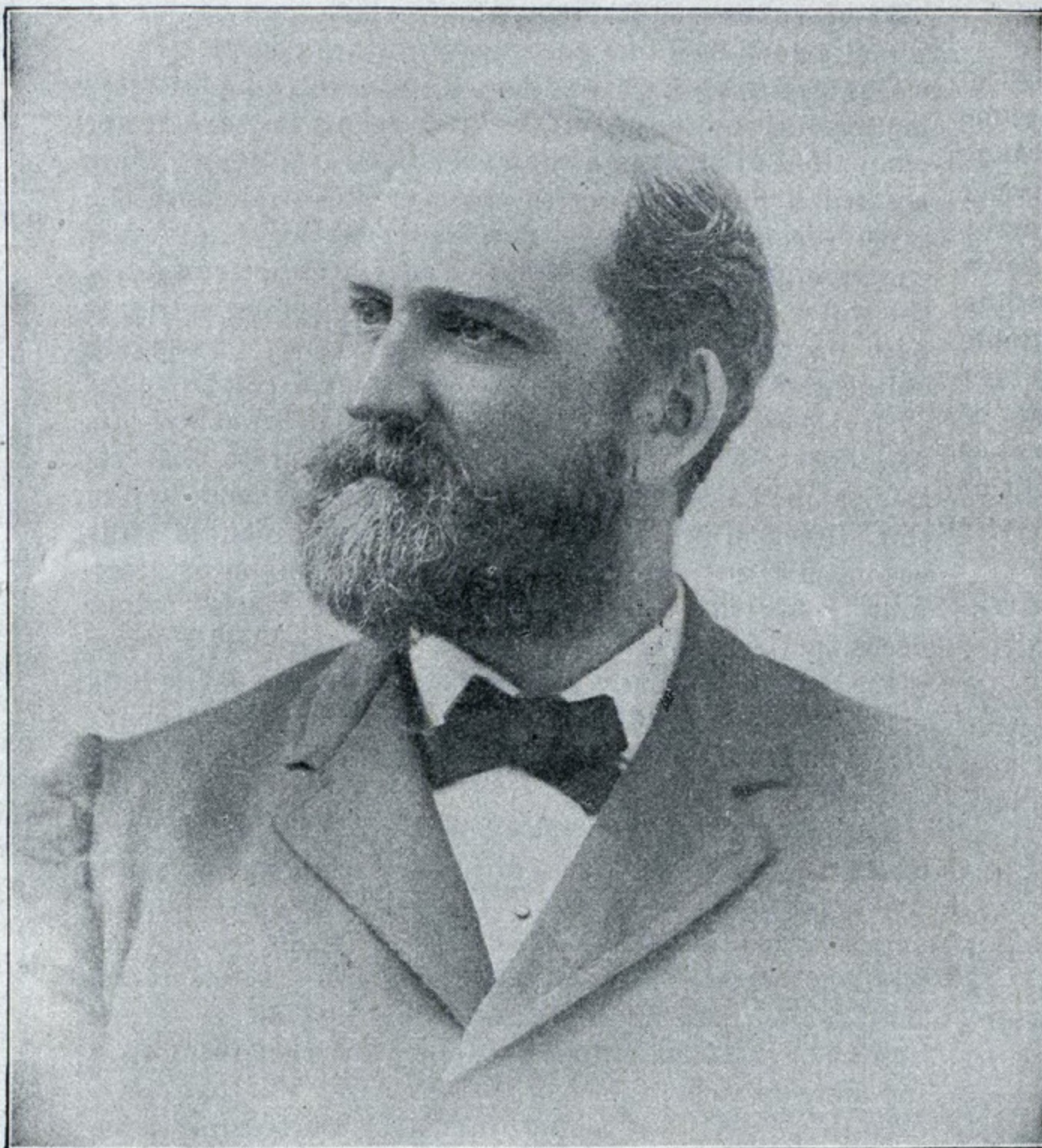
ANOTHER ARCTIC EXPEDITION.

An Arctic expedition sailed from New York on June 20, on the "Portia," for St. Johns, N. F. From this point the party will take the steam whaler "Falcon," and its objective point will be Lieutenant Peary's headquarters on Inglefield Gulf, lat. 77° 43', which point it is hoped to reach on July 25. It is also planned to go to Ellesmere Land for the two Swedish naturalists who were wrecked in that vicinity in 1892.

A DISTANT CONSIGNMENT.

From Duluth to the West Indies is quite a long distance to consign lumber and marks a new avenue of trade for the lakes, especially as the shippers are about closing a contract for ports still further south.

Lumber from Puget Sound to Montevideo is an ordinary charter, as it is also to Australia and China, and with fifteen feet draught through the St. Lawrence system of canals or any other waterway to the coast there



JOSEPH S. MUNDY, NEWARK, N. J.

should be no reason why the west and north-west tributary to the lakes should not export lumber in large quantities without trans-shipping.

The first consignment to the West Indies alluded to in the foregoing amounts to about 10,000,000 feet for delivery this season. It is taken by lake and canal to New York and then shipped by steam or sail. The freight charges from Duluth amount to about \$100,000 on the entire deal. The same concern is reported as having about closed a large sale to go to South America.

SAILORS' BATHROOM.

The ship Kenilworth, now loading at New York for San Francisco, has one feature that is a novelty to men accustomed to the sea, and that is a bathroom for sailors. The crew live in a comfortable and roomy house on deck, which has ample ventilation and light. Under the top gallant fore-castle there are fitted several large lockers or rooms, including this bathroom, with ample space in every way for entire comfort. The tub is of good size, and alongside of it is a pump for filling it.

The Kenilworth is a steel ship, built in Scotland about six years ago. A year later in the harbor of San Francisco, she was partly burned and sold by auction. She was bought by Arthur Sewall & Co. of Bath, and repaired in San Francisco. She now sails under the American flag. The Kenilworth is a four-masted ship of 2,179 tons, and carries double topgallant yards.

A dredging crew, while working at the foot of Addison street, Chicago, found a rusty old boiler, which proved to belong to the steamer Lady Elgin, which collided with the Augusta and sank, in 1860, when 400 of her passengers were drowned.

J. L. HIGGIE ON LIQUID FUEL.

President J. L. Higbie, of the Vessel Owners' Towing Co., Chicago, is almost certain that the fuel oil tests which have been made on his tug, the Blackball, form a perfect and profitable solution of the smoke nuisance by tugs. The tug on which the experiments were tried was leased by the smoke inspector five weeks ago for 60 days for a consideration of \$1. This concession was made because President Higbie said he had tried every smoke-preventing device that came along. His company was the owner of two patents, and neither had proved efficient. Then, after being fined \$700, he began burning hard coal, and he pursued that method until the close of navigation, and then figured up that the extra expense of the hard coal tests had cost him \$3,700, and was unsatisfactory.

"I found," he said, "that when the tug was suddenly called upon to do hard work and the steam from the exhaust pipe was thrown into the stack it created such an intense heat that the hard coal was simply melted and spread out in a kind of slag over the grate bars, shutting off the draft. It would then become necessary to call another tug. In this way our service was crippled and rendered more expensive. If it had been nothing but a straight pull, the coal would have worked all right, but it was the sudden efforts that destroyed its usefulness. Now, concerning this test of oil, it has proved an entire success. It makes no smoke, and there is neither noise nor odor of any consequence. It has taken some time to perfect the apparatus, but it works like a charm. I was out on the boat last Saturday, and watched it carefully. I am greatly pleased at the outcome. The tug steamed along beautifully. There was no trouble whatever in making steam and keeping up the pressure. That is an extremely simple matter. It is only a question of burners. We have two burners in the furnace now and can put in three or four. The oil makes an intense heat and is easily governable. The tug will carry fuel oil sufficient to last between two and three days. It will only carry coal enough to last a day and a half. There is one point to the advantage of oil.

"Another thing in favor of oil is that steam may be got up quickly. We experimented on this point. We washed the boiler out and filled it with cold water; then we lighted the burners and within forty minutes had steam up. To fire a cold boiler with coal requires between three and four hours to get a head of steam. If pressure can be secured in forty minutes, it will not require more than six or eight minutes to get steam when the water is hot. Here another saving can be effected. Often tugs will lie at the docks two or three hours. With the use of oil a light flame can be kept in the furnace, and when there is a call for service the tug can get up steam while going to meet the tow. We can't do that with coal.

The noise incident to the use of oil has been obviated by changing the location of the feed pipe. At first the supply was introduced through the furnace door, and it made a loud noise. Then the door was walled up with brick and the oil introduced at the rear end of the furnace from two pipes. The result was that the flame is thrown against the wall at the front end of the furnace, then doubles back on itself and passes forward through the flues. The turning over of the flame renders the combustion more perfect. At the same time the noise is abated. As to smell, I noticed none Saturday. There are two pipes leading from the oil tank and one from below the tank, which are joined together above and form one escape pipe overhead for any vapor which might arise from the tank or the compartment about it.

"I believe from the figures that have been given me I can secure oil for less than the cost of coal. Three barrels of oil are about equivalent to a ton of coal. Outside of the prices quoted me oil is being purchased for less than 72 cents, and that, you see, would bring the cost slightly below the price we are paying for coal. I will not official in my statement about the success of this move until I am in possession of the tug for one week myself. At present I have no control over it, and it is not operated by my men. But, as I have told you, its workings are perfect, and if it does for me what it is now doing, I shall equip all my tugs with oil. Then there will be no smoke from our tugs. They will be clean and inoffensive."

Mr. Higbie estimates that it will cost from \$400 to \$450 to equip a tug with oil-burning apparatus. But he is willing to pay that, he says, to get rid of smoke.

James Davidson's last launch, the 3,000 ton steamer Shenandoah, is equipped with the American Ship Windlass Company's capstans and windlasses.

THE MARINE RECORD

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WE have received a communication this week from the north shore of Lake Superior stating that a large quantity of new lumber was strewn along the beach and requesting us to notify insurance companies who might have had risks on the cargo of a lost vessel that about 200,000 feet, all long planks, could be salvaged. The writer of the letter refers to Capt. J. W. Cousins, Port Arthur, Ont., for further information.

FREIGHT rates this week have slumped away below all former season figures, and yet chartering has been done to a somewhat great extent. It is more than strange that while ore from the head of the lakes at 80 cents per ton barely cleared expenses for the vessel, and many boats were kept to the docks rather than accept those figures, charters have been placed this week at something like a 25 per cent. reduction. To assure an equitable basis of transportation rates, all owners should get together and apportion tonnage on an equable rate of freight. Until this is done a constant cutting down of going rates is certain to prevail, even to the point of carrying cargoes for simply running expenses.

REGISTER TONNAGE AND DEAD WEIGHT CAPACITY.

A register ton is one hundred cubic feet, so that a cube 4. 7-10 feet in length, breadth and depth would contain just a register ton, yet there is no connection here with dead weight. The amount of 32 cubic feet being taken as the measure of a net ton of fresh water. Thirty-five feet of salt water is uniformly accepted as the equivalent of a gross ton, or two thousand two hundred and forty pounds avoirdupois weight, so that a cube box 3. 3-10 feet length, breadth and depth would contain a gross ton of mean salt water. Let us premise that register tonnage has reference to the internal capacity of a ship both above and below water, while the dead weight tonnage is governed by the external form of the vessel below water only; and this is affected directly as the draft of water of the vessel is lessened or increased, but the register tonnage remains constant. Again the vessel may be heavy or light in construction and this directly affects the dead weight capacity for cargo, but it makes no difference to the register tonnage. On the ocean the ordinary cargo steamer is expected to carry or lift two and one-quarter times her register tonnage, in tons dead weight, as also will a number of lake vessels; as the machinery and boiler space of these vessels are uniformly arranged just to exceed thirteen per cent of the gross tonnage. The deduction allowed for propelling power, machinery, etc., is uniformly thirty-two per cent in this class of propellers; but it would be misleading to estimate the dead weight capacity of various types of steamers by a proportion or per centage of the register tonnage, as an instance. A vessel has a register tonnage of 1665 tons, she carries 3800 tons total dead weight. Another propeller is 904 tons register, her dead weight ability is 2000 tons. Among recent built tonnage we note a lake steamer of modern build about 1900 tons register, but she only carries 2500 gross tons dead weight, or just thirty-two per cent more than her register tonnage, while the former vessels carry over one hundred and twenty per cent in excess of their register tonnage. When speaking of dead weight we here quote gross tons and inclusive of bunkers, that is, the total dead weight placed on board of the vessel above her equipped weight, for the bunkers or fueling weight and space being a valuable quantity according to the duration of the trip would only cause confusion if included, and for register tons we have quoted the net, for this is the official or registered tonnage of a vessel, perfectly independent of her burden. In some countries it is possible for the register tonnage to be at zero, but the United States and France have now an improved system of measuring.

ATMOSPHERIC PRESSURE ON LAKE LEVELS.

According to officials of the Weather Bureau, a large influence must be attributed to atmospheric pressure in the rise and fall of lake levels.

The data gathered at St. Mary's Falls Canal seems to bear out the views taken by the assistant chief of the Weather Bureau in showing that Lake Superior levels at least are frequently ruled by barometric indications, or rather that the cause is shown in the effect. There are however other agencies at work and periodic movements of the lake levels have been noticeable, not only on Lake Superior, but also on Lake Michigan, and this too, independent of barometric readings. It is admitted that the sun and moon, acting on the waters of Lake Michigan, control it in a similar degree to that of other enclosed or land locked areas of comparative magnitude, and such being the case, it is of more than ordinary importance to know the relative and prevailing forces acting on these bodies of fresh water.

A graphic delineation showing the curves of barometric readings, or atmospheric pressure during any particular month, with the consequent action of the surface clearly noted at certain points would do much to clear away the present mysticism regarding the apparently erratic action of lake and river levels.

The lake marine, and by that we mean all interests directly connected therewith, has been frequently assured that precipitation alone ruled the level of the lakes, although the period of such ruling has been most indefinitely placed, that is to say, if a more than ordinary precipitation took place in any one year or during the winter it might be two or three years later, before the lake levels became influenced thereby, all of which now begins to sound a good deal like guessing on future results.

The cycles of high and low water levels so positively maintained by former authorities seems to have fewer champions at this time than ever before, although there are still a number of close observers who adhere to the cycle theory and believe that independent of all other causes, or through a combination of all the active agents, the water rises and falls on the lakes reaching extremes both ways during a period of seven years. Crossman's delineation of surface curves seem to us to disprove the cycle theory entirely, thus, if we let go of what was understood to be a reliable guide, more accurate observations alone can establish a better and truer theory and in this direction we think the Weather Bureau is fully equipped to substantiate a more correct method of determining the rise and fall and the main causes which occasion the surface movements, yet, the simple statement that atmospheric pressure or deflections alone indicates the fluctuations is not found sufficient to account for the changes or to give credence to the principles involved.

Throwing overboard the cycle theory of high and low levels, the indefinite action of precipitation as well as the universally known power of celestial objects on the action of water levels and also to a certain extent the wind direction, which all lake men admit is one of the most potent agents in altering the surface, it is now desired to establish a theory whereby the barometer reading alone is to announce or herald water fluctuations at certain points. To render such a belief possible, a demonstration is necessary and we hope that there is sufficient data in the hands of the Weather Bureau to so clearly place the question before the lake marine, that atmospheric action can be admitted as ruling in a greater measure than has hitherto been known or even thought of in its relation to the level of the lakes as found in diurnal fluctuations and periodic changes.

STEAMBOAT INSPECTION.

As showing a lapse from the laws of the steamboat inspection service, the *Detroit Free Press* says:

"Vessel owners and agents either do not know that it is their duty to report to the local inspectors whenever a steamer is taken to the dock for repairs, or else have become accustomed to disregard it. However it may be, vessels are often dry-docked and taken away after repairs have been made without the inspectors being cognizant of it. Rule 6, section 5, of Rules for the Inspection of Steam Vessels says: 'Whenever any steam vessel is placed in the dock for repairs, it shall be the duty of the owner or agent to report the same to the board of local inspectors of that district, so that a thorough inspection may be made, to determine what is necessary to make such vessel seaworthy, if the age or condition of the steamer in the judgment of the inspector renders such inspection necessary.'"

We are not aware that the foregoing rule has been rescinded. Certainly it is correctly quoted. Again, if we look at the preceding section in Rule 6, we find:

"In the inspection of the hulls of steamers, if the inspector shall not have satisfactory evidence otherwise of the soundness of the timber, he shall not give a certificate until the hull of the vessel shall be bored to his satisfaction."

There are other details in the same rule relative to per-

mits for changing ports to undergo repairs, and it is expressly stipulated "that no steam vessel whose certificate has expired will be permitted to carry passengers or freight while en route to another port for repairs."

From the foregoing it would seem that local inspectors could not help frequently clashing with the work and duties of private surveyors, more especially perhaps in the matter of damage surveys. Such, however, is not the case, as the inspectors are always at liberty to see a copy of any surveyor's certificate and note the recommendations therein made when the age or condition of the steamer in the judgment of the inspector renders such a course essential. Furthermore, it is clearly wrong to make the local inspectors agents for underwriters, owners or classification societies, as they would be in the event of their personally conducting damage surveys, boring for unsound timbers or criticizing in any way the constructive work on new vessels. Therefore, would it not be more in accordance with the exact duties of the service if it was clearly understood that the local inspectors, instead of surveying hulls, inspected and certified relative to their proper equipment only, accepting the rating of a classification society as to their condition, and this is practically what is done, whether strictly conforming to the rules of the service or not. In the matter of boiler inspection, the annual tests are found to work admirably, but it is one thing testing a boiler and another vouching for the entire construction and seaworthy condition of a large steamer.

LAKE HYDROGRAPHIC OFFICES.

The recently established branch hydrographic office at Chicago and the approaching installation of a similar one at Cleveland indicates that the Navy Department, or at least the hydrographic branch of it, realize that the Great Lakes are deserving of a closer study and attention than has hitherto been given to these large and important waterways and their coast line.

The officer in charge at Chicago appears to us to be a second Lieut. Maury, and will not rest until a knowledge of the physical geography of the lakes has been developed. In this connection, we would suggest that the system of determining lake currents, originated by the Weather Bureau, be turned over to the hydrographic offices on the lakes as being more distinctively in line with the work of hydrography rather than in forecasting weather and meteorological studies.

Relative to a recent article published in lake dailies wherein the officer in charge at Chicago is made to allude slightly to the masters of sail vessels, and which THE RECORD repudiated at the time, we have since learned that Lieut. Blow did not state what was credited to him, and, furthermore, that the lake seaman has no more warm supporter than the hydrographic officer has already proved himself to be, and in so far as speaking derogatory of any pilot or master, he stated to the president of the Chamber of Commerce when in Cleveland last week delivering an admirable thesis on hydrography, that he regarded them (lake masters and pilots) "as being the best pilots afloat," an unqualified statement which, in doing justice to Lieut. Blow, we feel sure will be thoroughly appreciated by those actively engaged in carrying on the commerce of the lakes.

THE passengers of the North West who expected to view the scenery of the "Soo" river last Sunday will not be too well pleased at her locking through and proceeding on in tow at nine o'clock at night. Capt. Campau concluded that it would be a great waste of time to wait until daylight before trying to pass down the river, and consequently hired a tug to straighten the big steamer along on her night trip down the narrow and tortuous channels. The greatest drawback the North West seems to have experienced so far is the detention at St. Mary's Falls canal, as in waiting for her turn to lock through no less than ten hours were lost on her second trip. Cargo boats have had to wait as long as eighteen hours, and should such a stoppage be given the big white boat her scheduled time of running would be knocked "gally west" for a trip or two. Efforts are now being made to give the North West a right of way on account of her being exclusively a passenger boat, but this privilege should be carefully guarded, as too many might be claiming the right or prerogative on a passenger license.

RECOGNIZING that water transportation is greatly superior in point of economy and time to all rail routes, promoters are found to advocate even the most unlikely courses for canal development. To connect the upper Mississippi with Hudson Bay as an international waterway is among the projects now spoken of, but such an undertaking seems to be fully half a century ahead of all present requirements, if ever it would be required, even granting that it would tend to develop commerce along its route in a minor degree. Hudson Bay navigation is practically an ice-bound area for merchant ships.

TAXATION OF VESSELS.

The Commissioner of Navigation has prepared data concerning the taxation of vessels as follows: Great Britain, Germany and France impose taxes on the incomes derived from steamship and vessels as on incomes derived from other productive property. The rate is understood to vary with the budget requirements from year to year, but the next is not a large factor in the expense account of those operating vessels. (The North German Lloyd Co., for example, on its fleet of eighty iron and steel steamers, of 225,097 tons; larger by 2,000 tons than the entire registered iron and steel steam tonnage of the United States, paid as an income tax 94,000 marks—\$22,372—for 1893. In 1893, the city of Bath, Me., collected \$24,045 taxes on 224 vessels of 119,999 tons, mostly wooden sailing, besides taxes on capital stock of corporations owning ferryboats, tug boats, and steamboats.) On January 1, 1894, Austria exempted all seagoing vessels from income tax for five years, and all new seagoing vessels built in Austrian yards are exempted for five years from date of register from this tax. Vessels are not subject to federal taxation in the United States except in form of a few small fees on entry and clearance for specific services and tonnage tax. As imposed under the act of June 19, 1886, these taxes do not put vessels of the United States at a disadvantage, compared with vessels of other nations; indeed, for the fiscal year 1893 American vessels paid \$70,019 tonnage taxes, foreign vessels \$464,920, of which British vessels alone paid \$338,674.

For purposes of comparison it may be noted that the total British subvention to steamships enrolled as cruisers by the admiralty in this year's naval estimates is £21,972 (\$106,839), and that the British post-office estimates for this year allow a loss of £62,300 (\$302,924), on the cost of mail transportation to the United States over receipts from such postage, which may be taken as a rough measure of subsidy under the form of mail contract.

The only taxes, accordingly, on vessel property which may be deemed to place vessel owning in the United States at a disadvantage compared with vessels owning in other countries, are imposed by State tax laws. These have been modified by decisions of the Supreme Court of the United States; see particularly Philadelphia Steamship Co., Pennsylvania, 122 United States reports, 356, in which it is held the incorporate franchises and the property, the business, the incomes of corporations created by a State may undoubtedly be taxed by the States; but in imposing such taxes care should be taken not to interfere with or hamper, directly or by indirection, inter-state or foreign commerce, or any other matter exclusively within the jurisdiction of the federal government. Since 1881 New York State has exempted from all taxation for State or local purposes all vessels registered in the State, engaged in foreign commerce, and this exemption, drawn in the broadest terms, is to continue to the year 1922.

Under the decision noted above, Pennsylvania levies no taxes on vessels in foreign commerce. In twenty-one sea-board and lake States all vessels are taxed as personal property. In North Carolina, South Carolina, Georgia, more or less elaborate systems of license charge and occupation tax impose further burdens on shipping.

LAKE FREIGHTS.

Ore rates slumped away during the week to 65 and 60 cents from the head of Lake Superior, and 40 cents from Escanaba. Coal—Ohio ports to Lake Superior 35 cents, St. Ignace 40 cents.

Chicago grain rates also weakened to 1 cent on oats and corn, and 1½ cents down to 1 cent on wheat to Buffalo. Oats to Port Huron 1 cent.

Buffalo coal freights were fairly active at former rates. Chicago 45 cents, Milwaukee 40 cents, Bay City 35 cents and Duluth 25 cents. Canal freights advanced from 2¾ to 3 cents, owing principally to an effort made by the canal boat owners.

During the week freights reached the lowest of the season, falling to 1 cent corn Chicago to Buffalo, 1½ cents wheat from Duluth to Buffalo, and 60 cents ore from the head of Lake Superior. The general opinion is that the lowest ebb has been reached, and a steady upward tendency will prevail from now on, though actual indications hardly warrants such an outlook.

COMPARATIVE WHEAT VALUES.

The Pioneer Press some two years ago made the first attempt to figure out the profit to the shipper in the exportation of wheat from Duluth to Liverpool, after deducting all charges for transportation, elevator tolls, insurance, etc. Since then, by legislative requirements, the railroad and warehouse commission has undertaken to keep the public posted, not on what was gained or lost on any given shipment of wheat, but on the comparative prices of wheat at Duluth and Liverpool at any given date, with all intermediate charges added.

Thus, according to a statement just issued, No. 1 hard wheat on June 1 sold in Duluth for 57.88 cents a bushel, and in Liverpool on the same day for 70.50 cents a bushel. But the various transportation, elevator, insurance and other charges which had to be paid on that wheat before it reached Liverpool amounted to 11.85 cents, of which 7.55 cents were for freight and insurance, the remainder being elevator, weighing, inspection, commission and other charges. So that the cost of the grain to the Liverpool merchant which he sold on June 1 for 70.50 cents was 69.73, and all he could have made on it, supposing he had paid the Duluth price on June 1, was seventy-seven hundredths of a cent. These official statements of comparative prices at Duluth and Liverpool and of the cost of transporting it have completely put an end to the cry which gave rise to the investigation that the profit which the farmer should realize on his wheat by a higher price at Duluth was absorbed by middlemen and transportation companies in shipping it to Liverpool.

LAKE ERIE CAR FERRIES.

Col. Dick, president of the Pittsburg, Shenango & Lake Erie Railroad, in explanation of the project his company has under way, stated that the road was built for the coal and iron trade. The company has now contracts to deliver 600,000 tons of ore and 300,000 tons of coal. The encroachment by the South on both the coal and iron trade of Pittsburg has pointed Canada out as the field for future operation and the P. S. & L. E. Railroad will in the near future award a contract for two triple expansion screw steamers, 300 feet by 55, with four tracks each and with a capacity of 30 cars each. These will make two round trips a day to Port Dover or Port Burwell and there connecting with the Jillsonburg road, will cover Ontario. The ferries will crush through twenty-seven inches of ice and will run the year round. The Colonel did not state where these contracts were likely to be placed, although it is known that bids have been submitted by several lake shipbuilding firms.

VISIBLE GRAIN SUPPLY.

The stocks of grain in Chicago elevators last Saturday evening were 18,876,000 bushels of wheat, 2,974,000 bushels of corn, 160,000 bushels of oats and 126,000 bushels of rye. Total, 22,139,000 bushels of all kinds of grain, against 21,596,000 bushels a year ago. For the same date the Secretary of the Chicago Board of Trade states the visible supply of grain in the United States and Canada as 55,852,000 bushels of wheat, 7,180,000 bushels of corn, 2,455,000 bushels of oats, 244,000 bushels of rye and 79,000 bushels of barley. These figures are smaller than the corresponding ones a week ago by 1,253,000 in wheat and larger by 107,000 in corn. The visible supply of wheat for the corresponding week a year ago decreased 3,294,000 bushels.

CAPT. MAHAN ON BATTLE SHIPS.

Capt. Mahan, U. S. Army, was asked some questions the other day by an Englishman about the battleship of the future, and this was his answer "Military superiority in warfare depends upon heavy blows struck at the enemy's organized fighting force. Such blows must be struck by massed forces, the units of which should be individually powerful for offense and defense, because so only can be brought under the unity of command essential to success. The same aggregate of force in two or three different vessels will rarely be equal to that concentrated in one, because of the difficulty of insuring mutual support. This means heavy vessels or battleships. Of course, like all other statements, this means limitation. The size of vessels is conditioned not only by construction considerations, but by the fact that you need to scatter at times as well as concentrate. This involves the necessity of dividing your forces into several vessels, because a ship once built cannot be divided. Between the two horns of the dilemma you must strike a mean; but always a battle ship.

OBITUARY.

MYRON SCOTT.

Mr. Myron Scott, late local inspector of boilers at Grand Haven, Mich., died last week after an illness of several months' duration.

Mr. Scott settled in Grand Haven in 1863, and for nearly twenty years was in the employ of White & Friant as engineer of their boats. Eight years ago Mr. Scott succeeded Mr. Cowan as U. S. local boiler inspector of the steamboat inspection service, a position which he filled until a few weeks ago, when he resigned on account of impaired health. During his term of office Mr. Scott earned the respect and good will of all with whom he was brought into contact, and especially the marine engineers who had business relations with him.

Mr. Scott was a member of Grand Haven lodge, No. 139, Free and Accepted Masons, and was king in Corinthian Chapter, No. 84, R. A. M., and Thrice Illustrious Master of Grand Haven Council, No. 51, R. and

S. M. He was also a charter member of several marine engineers' lodges. He was a prominent member of Muskegon Commandery, Knights Templar. The funeral, on Sunday, was very impressive, and took place under the auspices of the Knights Templar, the Masonic order attending as escort.

LEFT TO THEIR FATE.

Letters have been received in St. Johns, N. F., from Robert Stein, of the United States Geological Survey, stating that the expedition which he was to lead into the Arctic regions this spring has been abandoned. Mr. Stein was in communication with Bouring Bros., of St. Johns, the great sealing and whaling firm, with regard to securing a steamer to transport him and his party to Ellesmere Land. He does not specify the cause of the failure of his enterprise, but it is assumed that he found it impossible to procure funds necessary to defray the expenses. His expedition, says the Boston Journal, had for its purpose not only the acquiring of scientific information, but the rescue of four intrepid young explorers, who a year and a half ago vanished as suddenly and strangely as if the ice had swallowed them up.

Alfred Bjorling and Ewald Kalstenius, students of the University of Christiania, sailed from St. John's in June of 1892 in a crazy little schooner of thirty-seven tons, with a crew of three sailors, bound for Ellesmere land. Late in July they touched at the Danish colony of Goodhavn, on the southern edge of Greenland, and after purchasing arms and ammunition and a scant supply of food and clothing, pushed on toward the north. From that day to this they have been seen by no human eyes, save perhaps that of some wandering Eskimo. In June of 1893, nearly a year later, their little vessel was found, an ice-incased wreck, on one of the Cary islands, by a Dundee whaler. Near by was a cairn containing the body of a man. The little party had been reduced from five to four. A hastily-written note in a tin can, under date of October 12, 1892, indicated that the explorers had gone in search of a tribe of Eskimos supposed to be at Clarence head, fifty miles distant, or Cape Faraday. Their provisions were sufficient to last only until January 1. The whaler attempted to reach Clarence head, but the ice prevented. What has become of Bjorling and his three companions is of course a mere matter of speculation, but men of experience in the Arctic have believed that there was a chance that they might still be living and awaiting the coming of rescuers.

The Swedish government, on hearing that Mr. Stein's plans had miscarried, did endeavor to engage one of the St. John's sealers to search for the missing men, but finally concluded that it could not pay the price demanded. Now the British Geographical Society has interested itself in the matter, and is said to be endeavoring to raise four thousand pounds sterling to send out a relief ship, but the success of the project is understood to be doubtful.

TREASURY DECISIONS RELATING TO VESSELS.

DREDGES AND SCOWS IMPORTED FROM CANADA FOR TEMPORARY PURPOSES IN THE UNITED STATES DUTIABLE.

TREASURY DEPARTMENT, April 7, 1894.—SIR: Referring to our conversation at the Department this morning and to the letter of Chas. B. Reade, addressed to you asking for your intercession with this Department for the purpose of obtaining the privilege of importing certain dredges and scows from Canada free of duty, I have the honor to state that I find that a similar application was made to the Department in 18 and was rejected. The following is the letter of the Assistant Secretary in the case:

"In reply to your letter of the 16th instant you are informed that, under the existing statutes and rulings of the Department, a Canadian dredge, imported into the United States for the purpose of doing work in the waters thereof, would be liable to duty, and that so far as this Department is advised there is no provision of law which would authorize a repayment of said duty or any portion thereof upon its subsequent exportation.

"It is true that in 1888 the privilege of using a foreign vessel for dredging purposes at Sandy Hook, without payment of duty, was granted under the following circumstances: One Joseph Cummings had a contract with the War Department for certain excavations in the main ship channel in New York Harbor. He claimed that no dredge existed in this country which was of sufficient power for the purpose, and the use of a foreign dredge was required. This statement was indorsed by the War Department and permission granted accordingly, on the ground that the work was public work and necessary for the public safety. The incident became the subject of an investigation under a resolution of the House of Representatives, and I learn that many protests were made by labor organizations and by persons having competitive interests at stake.

"The reason given in that case does not exist in the present. The work to be performed by your correspondent is in fulfillment of a private contract and has no connection with the government.

"I regret, therefore, to report that I find no authority for favorable action in the matter by the Department. "To Hon. Wm. H. Frye, U. S. Senate."

NEW PUBLICATIONS.

There has just been issued from the press, by John Wiley & Sons, No. 53 East Tenth street, New York, an excellent work entitled "Elementary Naval Tactics," by Commander Wm. Bainbridge Hoff, U. S. Navy. The work is designed as a text book, and is dedicated to the commander's son, who is also an officer in the U. S. Navy. The volume is well illustrated with plates and diagrams, and simplifies the most abstruse tactics in naval service to such an extent that no naval library can be considered equipped without it. Contains a copy of the text book on "Elementary Naval Tactics." Among the subjects discussed are "The organization and command of the fleet," "The sea army for offense and defense," "The fleet under drill and in action," besides a general epitome of the navigational and disciplinary codes. John Wiley & Sons, one of the best technical publishing firms in New York, have the business aptitude and acumen to issue those works which fill a gap at the time of publication, and "Elementary Naval Tactics" should be to all naval officers a work greatly desired at this time.

"The Thirty-sixth Annual Report of the Trade and Commerce of Milwaukee," for the year ended April 2, 1894, and compiled for the Chamber of Commerce by Secretary William J. Langson, is a volume highly creditable to the author and well worthy of the city, whose commercial importance it so faithfully and fully records. It is a pleasure to note the large and beneficial influence which the active business men of the greatest lake ports evidence in forming associations whose object it is to conserve the best interests of their citizens and commerce at large. Judging from the annual report now before us, the Milwaukee Chamber of Commerce is not a whit behind the most prominent associations of the kind at other ports.

"The Navigator's Pocket Book," arranged for reference to any subject on navigation, is a guide and instructor for the junior navigator. By Capt. Howard Patterson, issued from the press of Charles Scribner's Sons, New York, price \$2.00. Lake seamen may see the work at the office of THE MARINE RECORD or the publishing house of A. C. McClurg & Co., Chicago. The pocket book, though why it should be called so we are unable to surmise, is a neat edition of a very handy guide in the problems of practical navigation, and its value is further enhanced on account of its being the compilation of a man who has "gone through the mill" himself. The book contains 400 exhaustive definitions, in addition to the practical rules for working middle latitude, Mercator's and great circle sailings, as well as finding the ship's place by several standard chart problems, the latitude and longitude by dead-reckoning and by the sun, moon, planets and stars, and all these are worked according to concise methods. The book also deals with the arithmetic of navigation, compass deviation, nautical astronomy, the instruments employed, law of storms, manner of keeping the log book, magnetism, logarithms, the measurement of altitudes, Sumner's method, time, weather, etc. Another very valuable feature of this handy work is the fact that a fine set of danger-angle tables is to be found in the end of the book.

"Drainage Channel and Waterway." This is a history of the effort to secure an effective and harmless method for the disposal of the sewage of the city of Chicago, and to create a navigable channel between Lake Michigan and the Mississippi river. Compiled by G. P. Brown, under the direction of the Board of Trustees of the Sanitary district of Chicago, and issued from the press of R. R. Donnelley & Sons Co., Chicago. The features on which this volume treats may be clearly gathered from the title. The work of forming the channel is one of the greatest engineering feats of the century, and the comprehensive manner in which the entire question is treated, coupled with the high typographical skill in which the volume comes from the press, renders it of the greatest historical importance and worthy of a place in all well appointed libraries. According to present plans the channel will be completed in 1896, and the advantages of a new highway of commerce from the lakes to the gulf will be demonstrated to the great West and Northwest.

The list of beacons, buoys and day marks for northern lakes and rivers corrected to the opening of navigation, 1894, has been issued by the U. S. Light-House Board. Mariners and others interested in commerce and the preservation of life and property from loss by shipwreck on our coasts are earnestly requested to give prompt information to the inspector of the Ninth Light-House District, Chicago, Ill., the inspector of the Tenth Light-House District, at Buffalo, N. Y., or the inspector of the Eleventh Light-House District, at Detroit, Mich., of cases in which any of the buoys or day marks described in the list are out of position, and of all cases in which the published instructions from this board are not strictly executed, that the board may, with as little delay as possible, apply the proper remedy, and prevent

neglect of duty in matters connected with the day marks of the United States. A copy of the new list will be sent free of charge to any shipmasters on application to the office of the Light-house Board, Washington, D. C., or to the inspectors at the above named ports.

Our thanks are due to C. D. Sigsbee, Commander U. S. Navy Hydrographer, for copies of the new Pilot Chart of the lakes for special distribution, also for recent copies of "Notice to Mariners" and "Azimuth Tables," compiled expressly for the lakes, showing the Sun's true bearing every ten minutes from the moment of rising and setting. Shipmasters can not have a better compass corrector than the simple and handy bearings given in these tables.

We have received from the chief of the Weather Bureau, through Marine Inspector Norman B. Conger, Detroit, a parcel of wreck charts of the lakes, showing the location of wrecks occasioned by weather conditions from 1886 up to the end of last season. This delineation is now being generally circulated among vesselmen, who we find are much pleased at the interest taken in marine work of the Weather Bureau. The next step in the direction of "Telling us something" would be a delineation showing the limit density and prevalence of fogs on each lake.

NEW TONNAGE.

The following lake built tonnage was granted official numbers by the Commissioner of Navigation during the week ending June 16, 1894: Steam—Kirk S. Blanchard, 113 tons, Buffalo, N. Y.; Fire Proofer, 9 tons, Chicago, Ill.; Satisfaction, 48 tons, Milwaukee, Wis.; W. J. Hingston, 22 tons, Buffalo. Sail—Valiant, 9 tons, Chicago; Nellie Johnson, 41 tons, Grand Haven, and the Crusader, 28 tons, Chicago.

MARITIME PATENTS.

The following patents recently issued and applied for will be of interest to marine people.

520,691. Screw-propelled vessel. Charles G. Lundborg, Philadelphia, Pa. Filed Jan. 6, 1893. Serial No. 457,566.

CLAIM.—1. A vessel hull having its frames or ribs bent to form on each side a plurality of tunnels for propeller shafts, one or more of said frames on each side bent to give form to all the tunnels and all the frames conforming below said tunnels to the lines of lateral contraction toward the stern.

521,388. Boat-ballasting device. James P. Pool, Brooklyn, N. Y. Filed Oct. 25, 1893. Serial No. 489,150.

CLAIM.—1. As an improvement in means for ballasting boats, the combination with the boat body and the sail boom, of a weighted boom pivoted on the boat, connections between such sail and weight booms, whereby such weight booms will be projected at right angles from the sail, to windward.

521,405. Propelling mechanism for boats. Charles P. Dieco, Owensborough, Ky. Filed Aug. 14, 1893. Serial No. 483,112.

CLAIM.—1. The combination, with a boat, two or more brackets attached to its sides, and paddle rods having their innerbearings in said brackets, of a horizontal bar, which connects the inner, pendent, crank arms of said rod, and is provided with upturned ends having hand-holds.

521,652. Steam steering apparatus. Edward Heyde, East Saginaw, Mich., assignor to the Wickes Brothers, same place. Filed Dec. 23, 1893. Serial No. 494,566.

CLAIM.—1. In a steam steering apparatus, the combination with a steam cylinder and its piston rod, of a cross head carried by said piston rod, two sheaves carried by the cross head, chains each having one end made fast and carried over said sheaves respectively in opposite directions and connected to the tiller, a steam valve, a valve gear actuated by the piston rod, and means, for manually controlling the valve independently of the movements of the piston rod.

521,527. Canal Towage. Joseph I Morrow, Camden, N. J. Filed July 19, 1893. Serial No. 480,955.

CLAIM.—1. In a canal and water-way towage system, the combination of a continuous-motion endless-cable arranged and operated above the surface or sides of a canal, a removable-grip suspended from and carried by the cable, a distinct and separate tow-line or connection between the grip and boat, solely for towing the boat, and a distinct and separate grip-line or connection between the grip and boat, solely for operating the grip.

LUBRICATING PULLEY BLOCKS.

In a record of service tests of hoisting tackle recently made by Robert Grimshaw, M. E., at the Brooklyn Navy Yard, in collaboration with Lieut. John A. Bell, of the Equipment Bureau, U. S. Navy, for the purpose of determining the percentage of power wasted by unlubricated blocks. A four-fold tackle which had been lying by a long time, the bearing surfaces being dry and dirty, was tested by slowly hoisting various dead weights by hand power applied through a 16-fold com-

pound tackle and measured by a spring balance. Next all bearing surfaces were cleaned, but not lubricated, and the same tests made, then the bearings were lubricated, and tests repeated.

The results showed that lubrication reduced the friction, in comparison with the test of uncleaned bearings, about 60 per cent, and when compared with clean though dry bearings, about 33 per cent.

The percentage of saving increased with the load, which is important in view of the fact that the loads were very light for the tackle. As it is, sufficient power-saving is effected to represent the work of one man in three; that is, to enable two men using clean and lubricated blocks to do as much hoisting as three with the rough and dirty blocks.

The lubricant used was Dixon's Waterproof Graphite Grease, as, according to Mr. Grimshaw, that is best adapted for anchor-handling tackle, which is exposed to both rain and sea water.

Graphite being unaffected by sea water or extremes of temperature, and the best lubricant for bearings getting heavy loads and rough usage, is admirably adapted for all machinery and tackle aboard ship, in frigid, temperate or torrid zones.

TRADE NOTES.

The Soo City Machine and Boiler Works, Sault Ste Marie, Mich., James A. Lawrie, lessee, late civil and mechanical engineer with the Solar Refining Co., Lima, O., states that the works are running this season under an entirely different management than heretofore, and that the shop is in first class shape now with good tools and with good men, under the superintendence of Thos. C. Fitzgerald, formerly with the Iron Bay Manufacturing Co., later the Lake Shore Iron Works, Marquette. The shops are now fitted with electric lights and power to handle work promptly and advantageously at all hours, day or night. Mr. Lawrie says, we also have, as we believe, the largest steam hammer at this end of the lakes. Our business is to give prompt and careful attention to marine repairs and our charges are in competition with those of lower lake ports.

The Monitor Vapor Engine Co., Grand Rapids, Mich., are now manufacturing a superior launch engine from one to ten horse power, also complete equipment for launches built by the firm, all of which are of the Carvel build with handsome lines and a high finish.

Dean Bros., Indianapolis, Ind., have received heavy new machinery from the East for their new shops. It is the intention to have these the model shops of the West. They have their pay roll again up to over 100 men, but are not pressed with orders. The strikes, coupled with so many manufacturing still being shut down, greatly limit the demand for steam pumps, but they hope that by the time their new shops are completed, the troubles will be largely over.

Mr. J. G. Speidel of Reading, Pa., patentee, manufacturer of the well known Economic Safety Hoist, has formed a partnership with H. P. Roeper, late with the Harlan & Hollingsworth Co., of Wilmington, Del., and will continue the manufacture of hoists, elevators, cranes, etc., as before on the premises, 807 and 809 Cherry street, Reading, Pa.

The large viaduct of the Union Station Association of Detroit, an immense structure, over which four railroads enter Detroit, is now being painted with the L. S. G. graphite paint, manufactured by the Detroit Graphite Manufacturing Co. This is being done to protect the metal from the smoke and gases of the M. C. R. R. locomotives, which pass under it, and have nearly ruined the ordinary paint which was only a short time since applied. This is pretty good evidence of the esteem in which the L. S. G. graphite paint is held where its merits are known.

W. Christie, of 173 Christopher street, New York, does not seem to be suffering from the effect of any slackness in business. He has recently furnished to the De La Vergne Refrigerating Co., six 32-inch sectional duplex piston rings, four 28-inch, two 24-inch, three 17-inch, and one 16-inch. To Henry R. Worthington, four 28-inch and four 14-inch pistons and high pressure rings. To the Cornell Steamboat Co., two 48-inch, duplex rings, and one 52-inch, one 42-inch, one 40-inch, three 32-inch, one 28-inch, two 24-inch, one 18-inch, and one 14-inch; also rings for use on the steamers Robert Garrett, Erastus Wiman, St. Johns, Sandy Hook, City of Kingston, City of Hartford, City of Springfield, Rickard Peck, Homer Ramsdell, and Rhinebeck; also to the New York and Cuba mail steamships Seguranca, Vigilance, and Yucatan; also for steamers Concho and Leona. Besides he has rebored and fitted with duplex rings the engines of many other steamboats during the past season, besides stationary engines entirely too numerous to mention. In the line of Climax separators his business has been equally good, having supplied them to the Edison Electric Illuminating Co. for their largest 2,500 horse power engines, and to several other power plants. His boring machines have had an equally gratifying demand.

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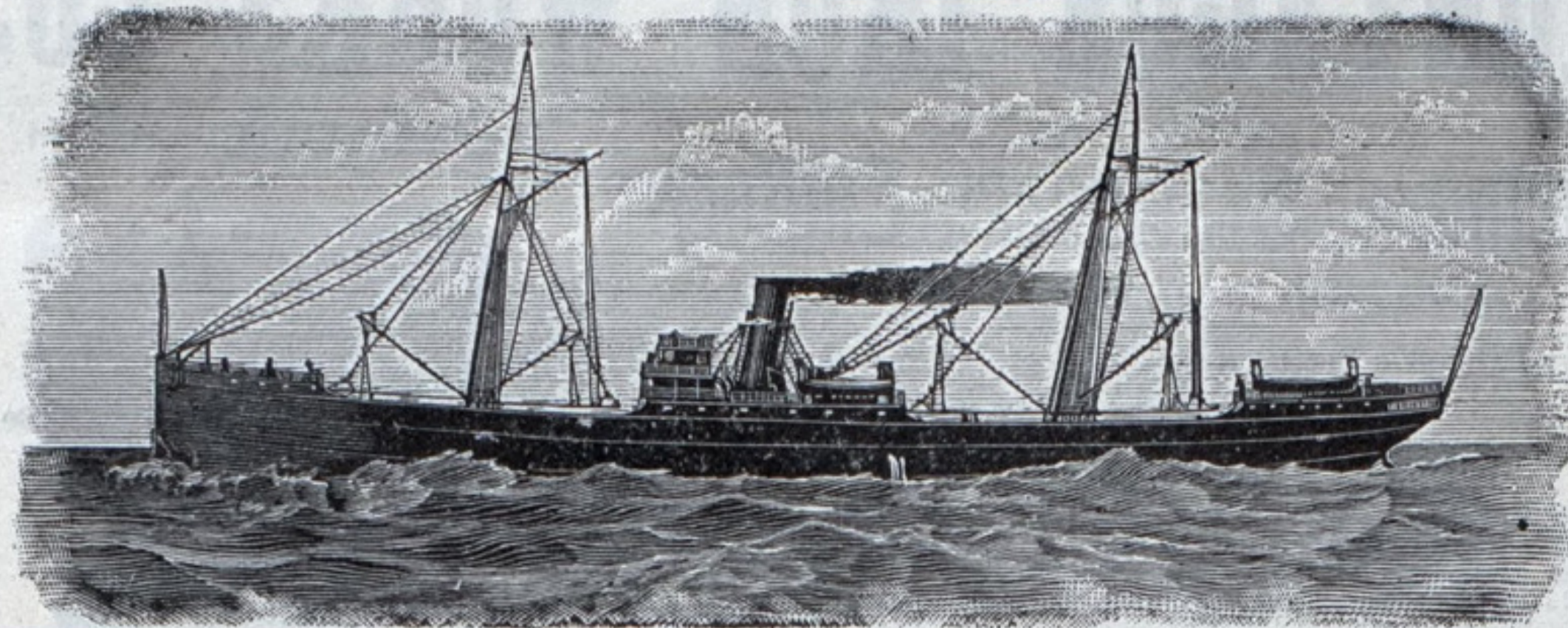
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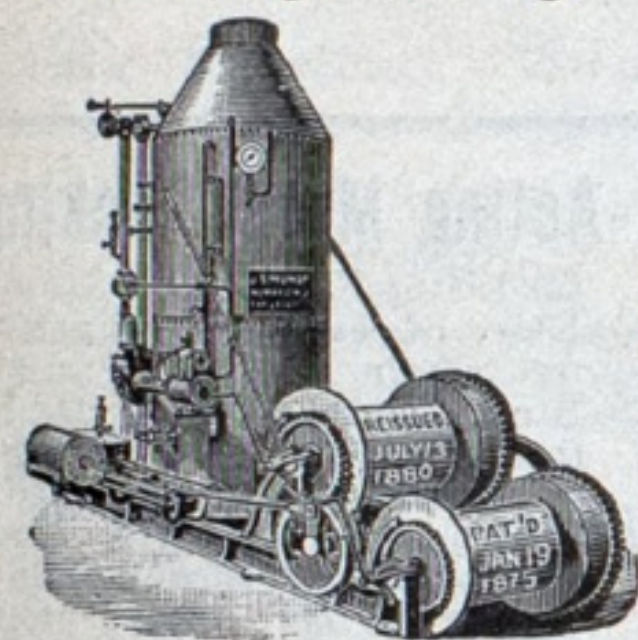
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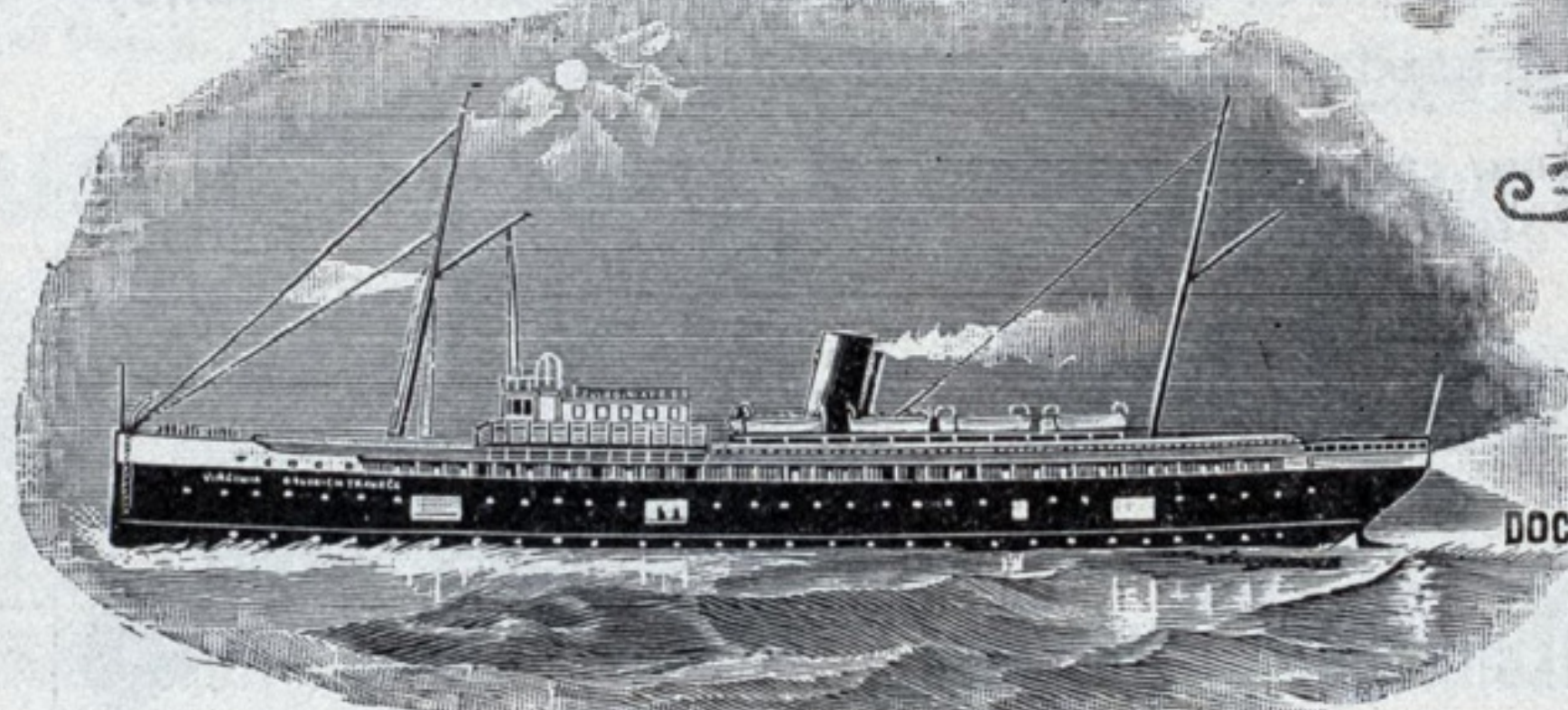
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PROPOSALS.

U. S. ENGINEER OFFICE, 34 West Congress St., Detroit, Mich., June 28, 1894. Sealed proposals for Power House and Office Building for the 800-ft. Lock, St. Mary's Falls Canal, will be received here until 2 p. m., July 28, 1894, and then publicly opened. Information furnished on application. O. M. POB, Col. Corps of Engineers. 26-28

OFFICE OF THE LIGHT-HOUSE ENGINEER, SEVENTH DISTRICT, New Orleans, La., June 2, 1894. Sealed proposals will be received at this office until 2 o'clock p. m. of Tuesday the 3d day of July, 1894, for furnishing materials and labor of all kinds necessary for the completion and delivery of the metal work required for increasing the height of the tower at Key West, Florida. Plans, specifications, forms of proposal, and other information may be obtained on application to this office. The right is reserved to reject any or all bids, and to waive any defects. JAMES B. QUINN, Major of Engineers, U. S. Army, Light-House Engineer, Seventh District. 23-26

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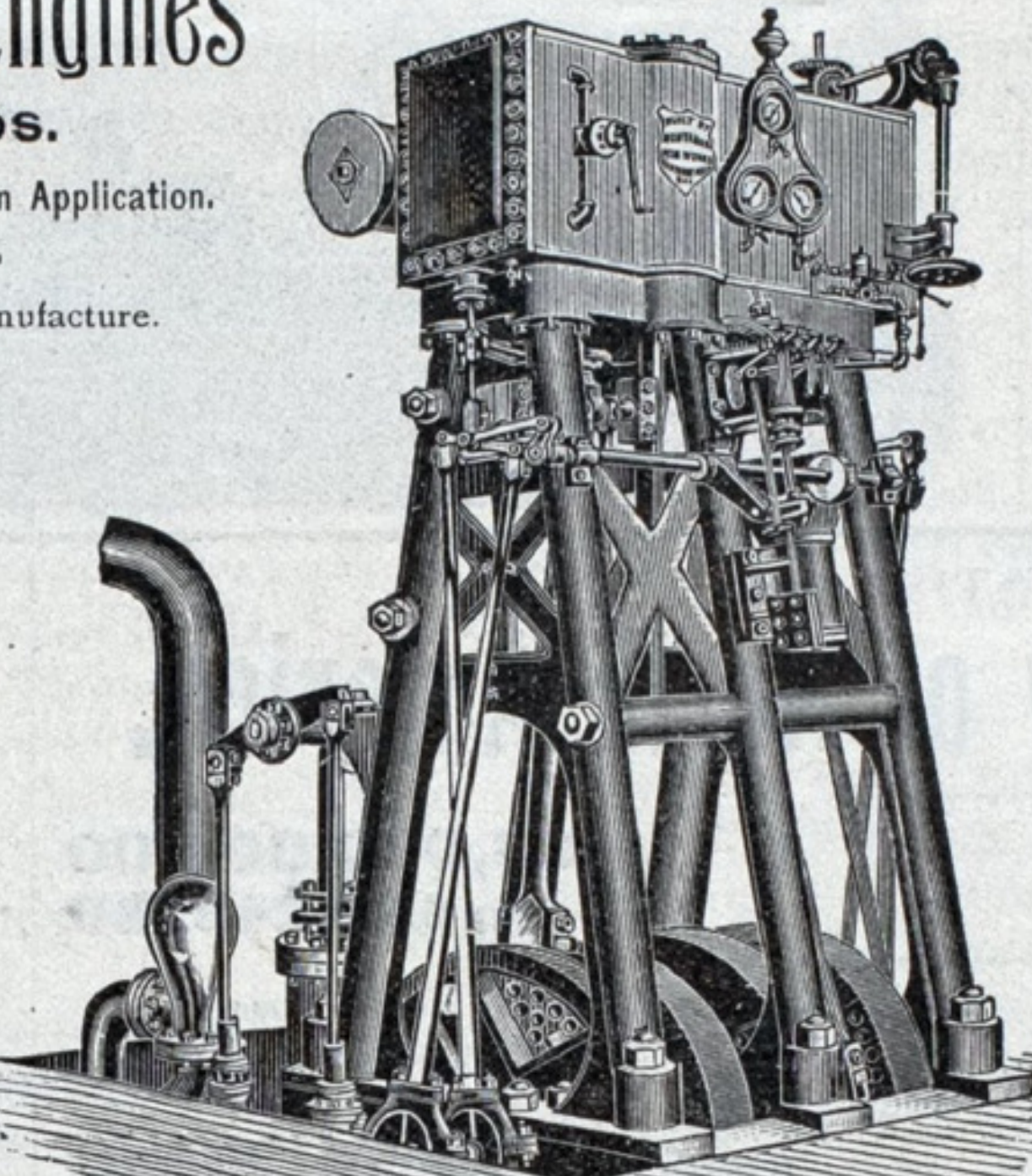
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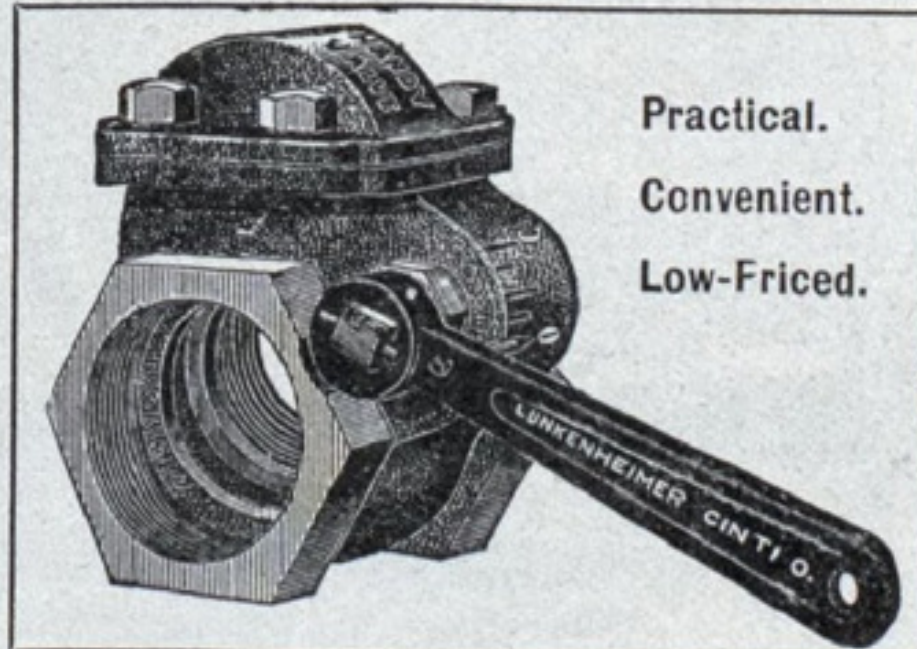
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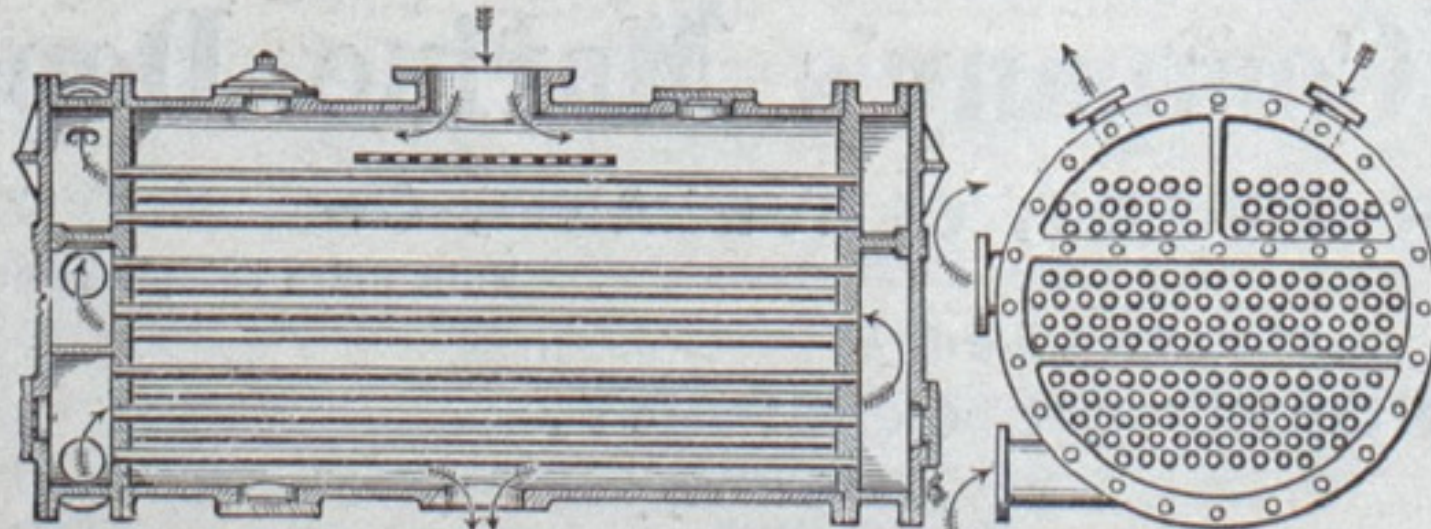
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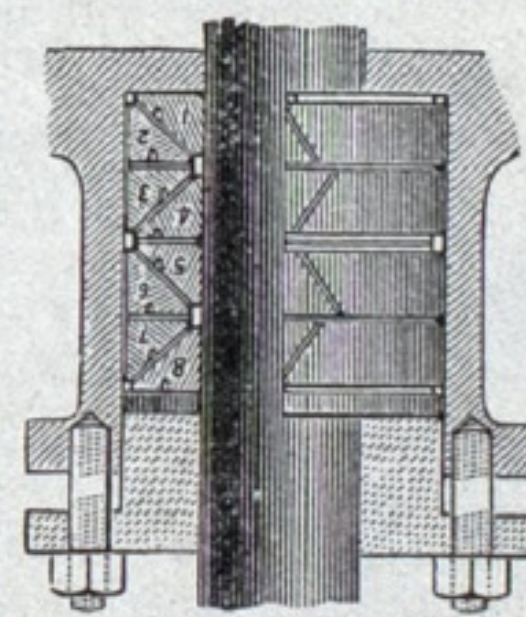
55 and 57 N. Clinton St., Chicago, Ill.

Y. P. S. C. E. SOUVENIR.

An edition of the Souvenir Maps of the Y. P. S. C. E. Convention to be held July 11th to 15th, at Cleveland, O., has been issued to the Nickel Plate Road, the shortest through passenger line between Buffalo and Chicago. Any person who expects to attend this Convention and desiring one of these maps can have same forwarded to his address, free, with the compliments of this popular low rate line.

Requisition should be made on the Advertising Department of the Nickel Plate Road, Cleveland, O. B. F. Horner, General Passenger Agent. 20-27

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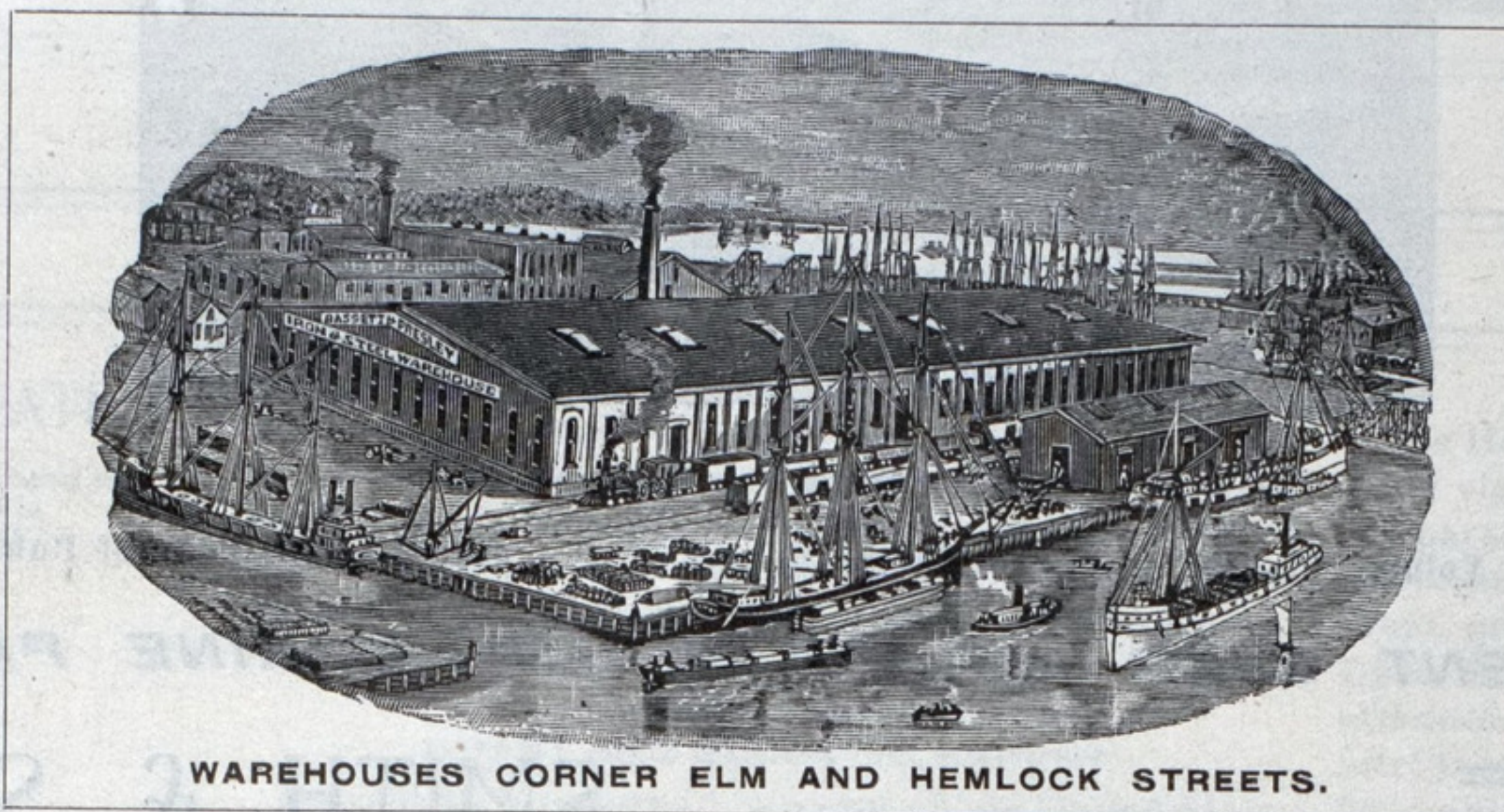
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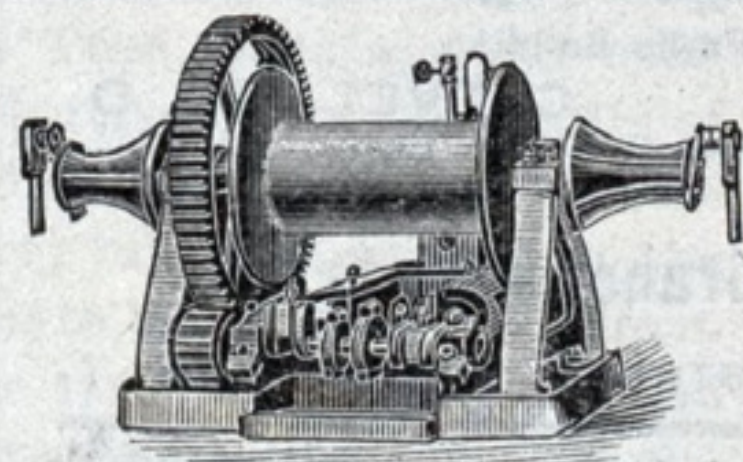
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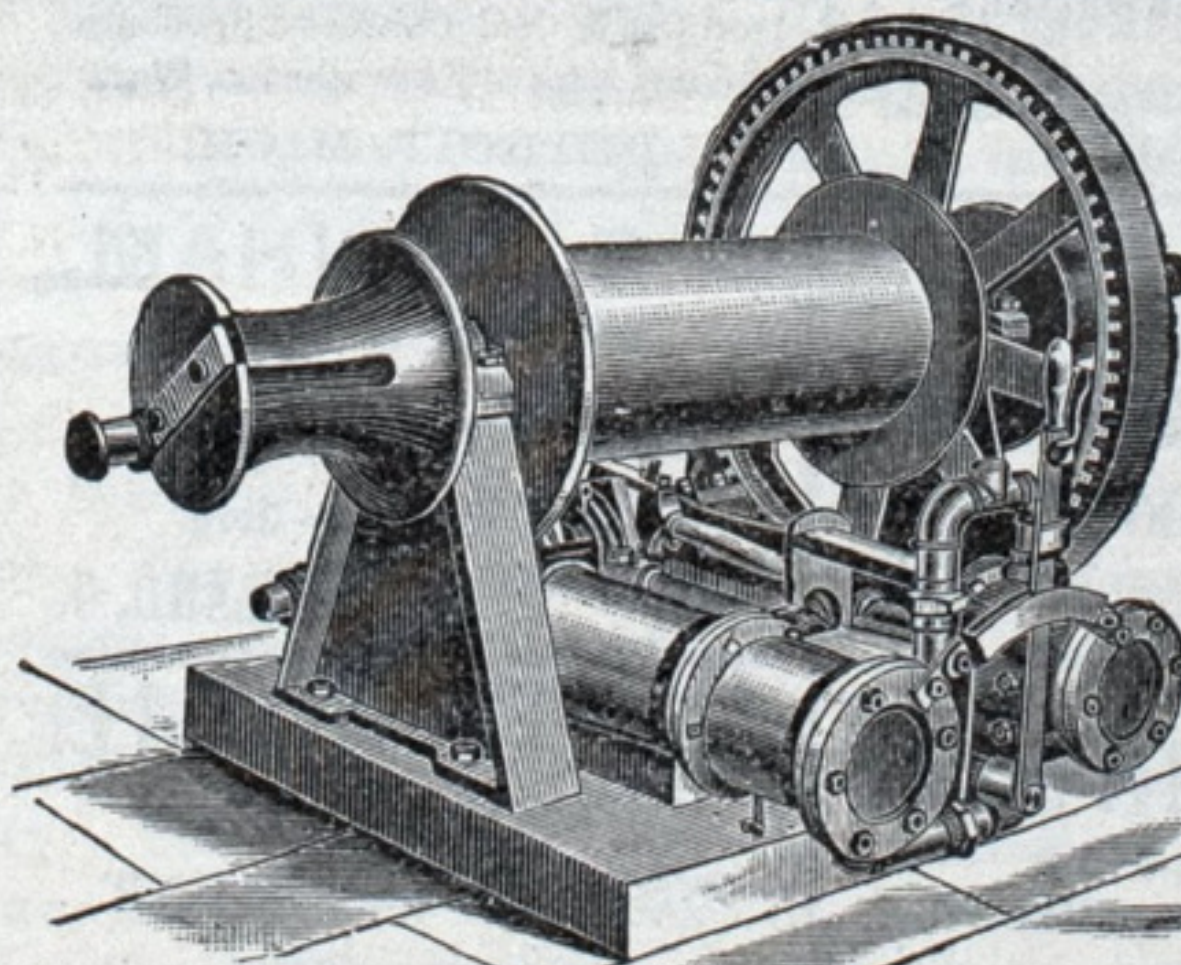
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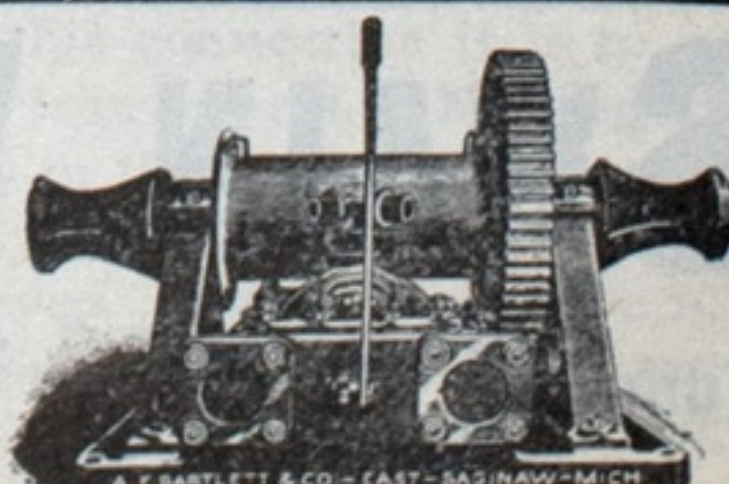


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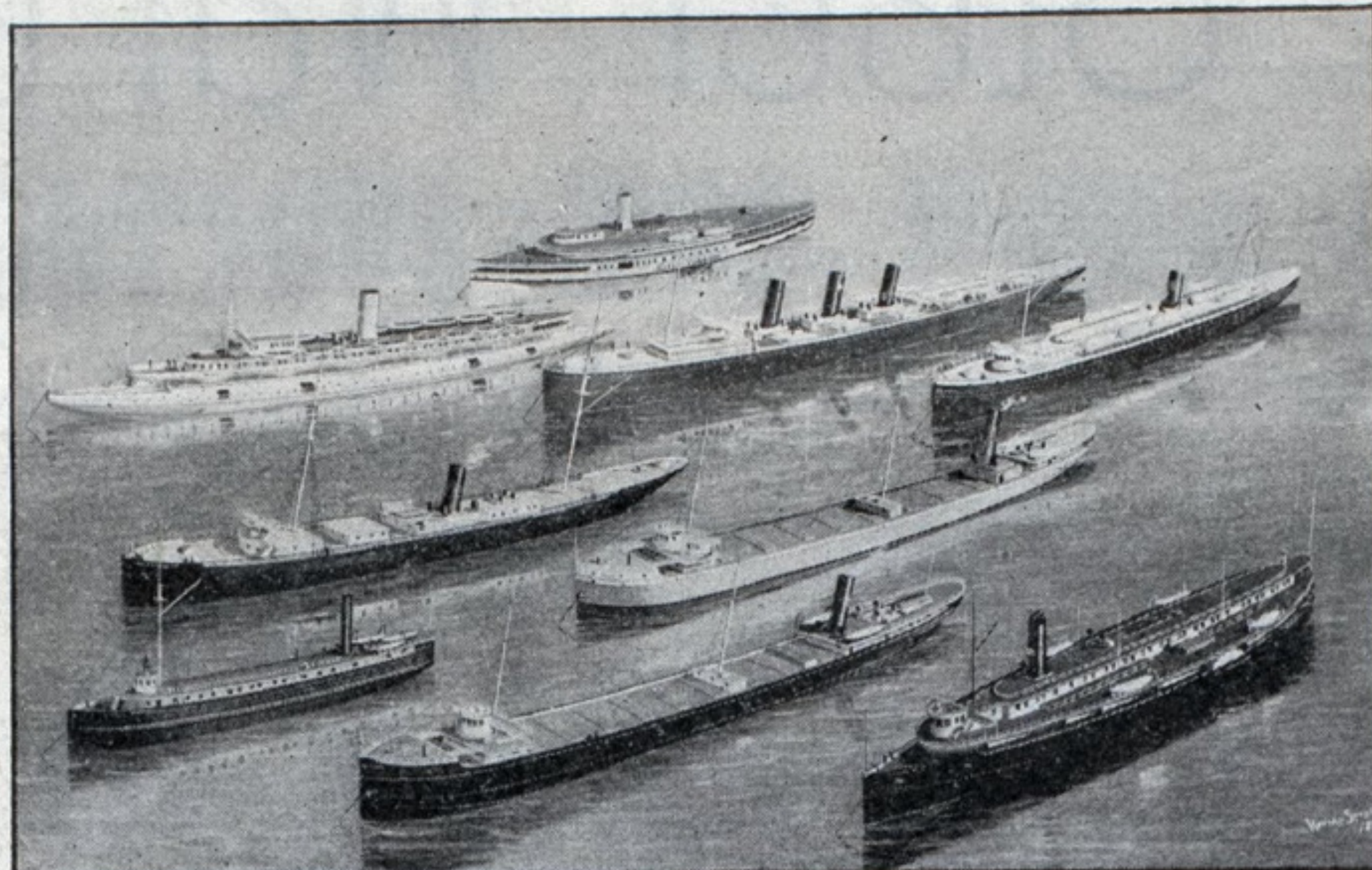
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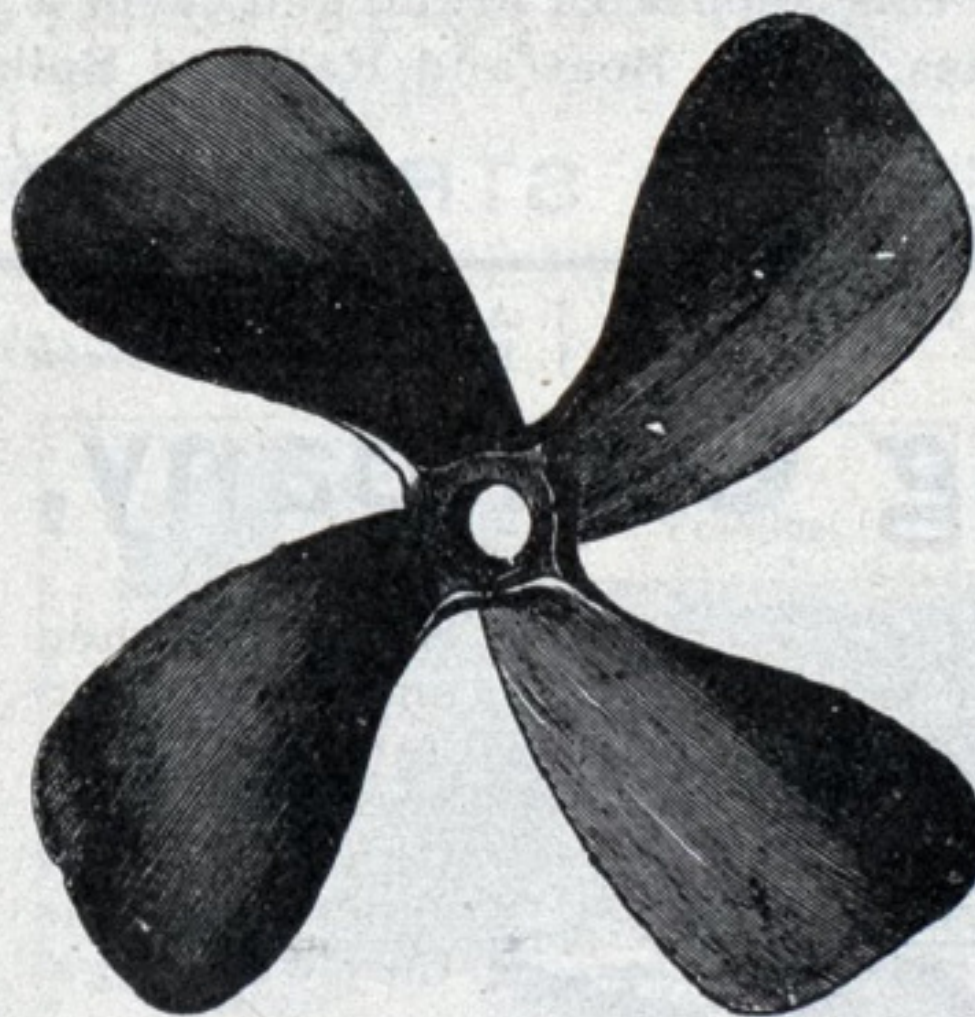
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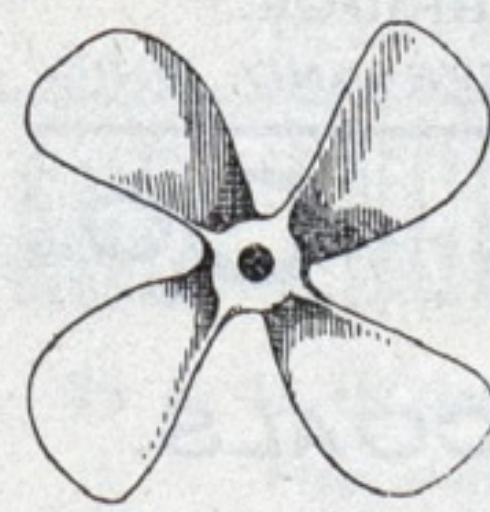
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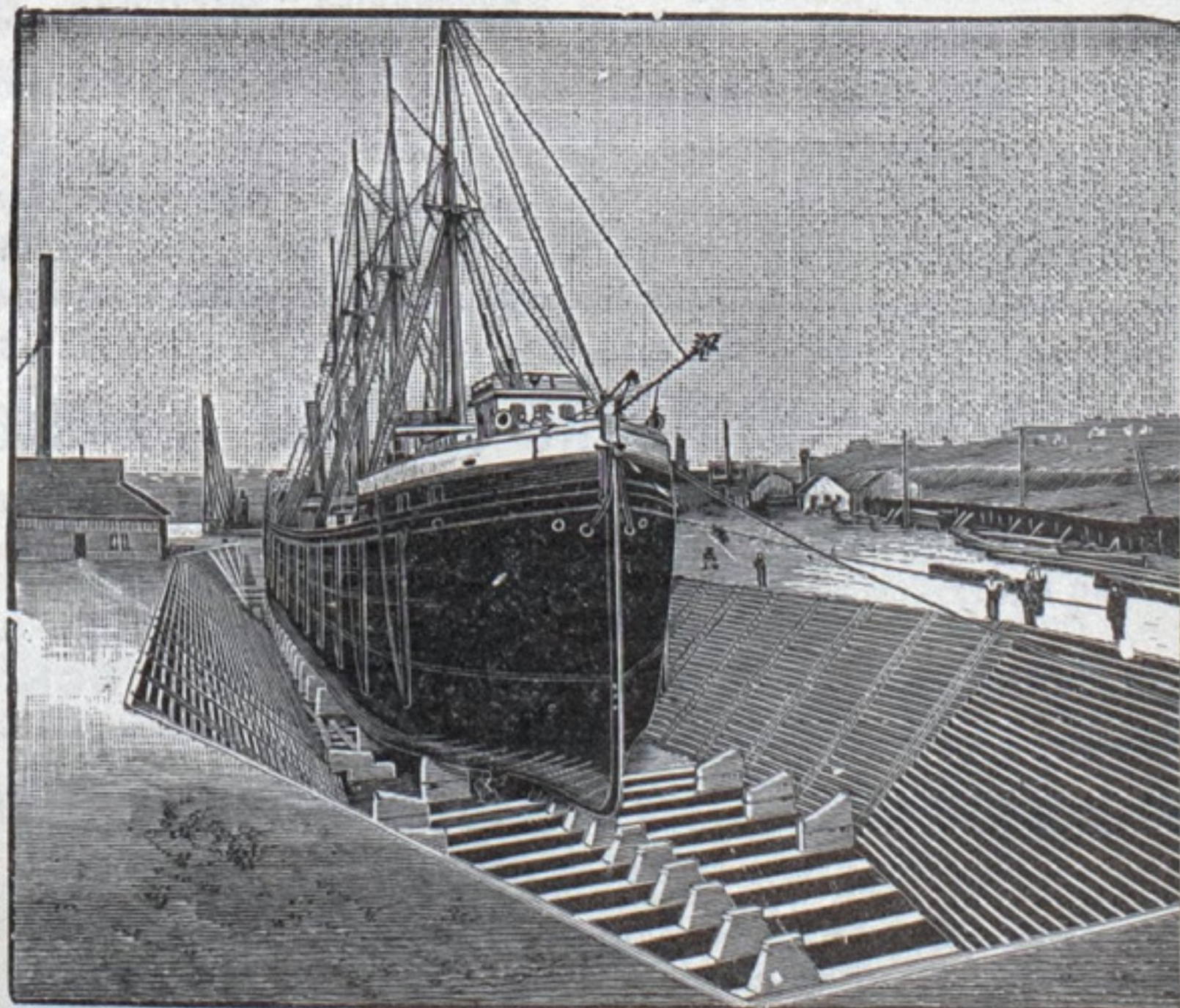
50 ft.

Depth of

Water on

Keel Blocks

16 ft.



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Width of

Gate

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Depth of

Water on

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